

# THE POINT – SOUTH PKG 2

*ROLESVILLE, NORTH CAROLINA*

## STORM DRAINAGE CALCULATIONS

PROJECT NUMBER: AWH-20000  
DESIGNED BY: W. T. O'DANIEL, PE

DATE: JULY 28, 2021



McADAMS

2905 MERIDIAN PARKWAY  
DURHAM, NORTH CAROLINA 27713  
NC Lic. # C-0293

## **THE POINT SOUTH – PKG 2**

### *STORM DRAINAGE SYSTEM CALCULATIONS*

#### **GENERAL DESCRIPTION**

The Point site is located along NC HWY 401 (Louisburg Road) and west of East Young Street in Rolesville, North Carolina. The proposed development at The Point is approximately 300 acres, divided into two sections with one to the north of NC HWY 401 (The Point – North) and another to the south of NC HWY 401 (The Point – South). This storm drainage analysis includes CD Package 2 of the “The Point – South” only. The total development will consist of approximately 804 lots, a mixture of townhomes and various types of single-family housing, thirteen stormwater control measures, sidewalks, roadways, greenway trail, and associated infrastructure and various amenities.

The Point South – Pkg 2 development is located within the Neuse River basin with the site’s stormwater runoff draining into Harris Creek. The proposed development shall be subject to storm drainage requirements set forth in the Rolesville Unified Development Ordinance.

#### **CALCULATION METHODOLOGY**

- > Rainfall data for the Wendell, NC region was taken from NOAA Atlas 14. This data describes a depth-duration-frequency (DDF) table describing rainfall depth versus time for varying return periods in the Wendell, NC area. These rainfall depths are entered into the “Stormwater Studio” application to determine design flows associated with the storm drainage system. Please reference the rainfall data section within this report for additional information.
- > The time of concentration was calculated using the Kirpich Method.
- > The existing on-site topography used in the analysis is from a field survey by The John R. McAdams Company, Inc. and local GIS data.
- > For each individual storm drainage inlet, a drainage area was measured as well as assigning impervious surface percentage. From this impervious percentage, a rational *c* factor was calculated based on 0.95 for impervious areas. For drainage areas with a combination of both pervious (Open Space and Lawns,  $C=0.35$ ) and impervious areas, a composite “*c*” factor was interpolated.
- > The pipes were sized using “Stormwater Studio 2021 Ver. 3.0.0.25”. This program accepts the input data from each inlet, as well as physical characteristics of the storm system to be designed, and calculates flow rates and pipe sizes throughout the system. The final results of this program as well as calculated pipe sizes and hydraulic grade lines may be found in the appropriate section of this report. The minimum pipe size was 15” unless otherwise shown on the plans. Pipe material is RCP or HDPE as indicated on the plans.

- > The inlet types included for this project are primarily NCDOT type combination catch basins with curb inlets and grates. The calculations include an analysis to determine gutter spread at these inlets based on a 4-in per hour rainfall intensity.
- > The storm water network was analyzed for the 10-year storm event using a starting time of concentration of 5 minutes.
- > The various inlet types are shown on the stormwater detail sheets, within the plan set. Flared end sections or Endwalls are used at discharge points. Headwalls or structures are used at inlet points. Velocity dissipators are provided at discharge points to prevent erosion and scour in these areas. The dissipators have been sized using the NYDOT method.

*PRECIPITATION FREQUENCY DATA TABLES*

# IDF Report

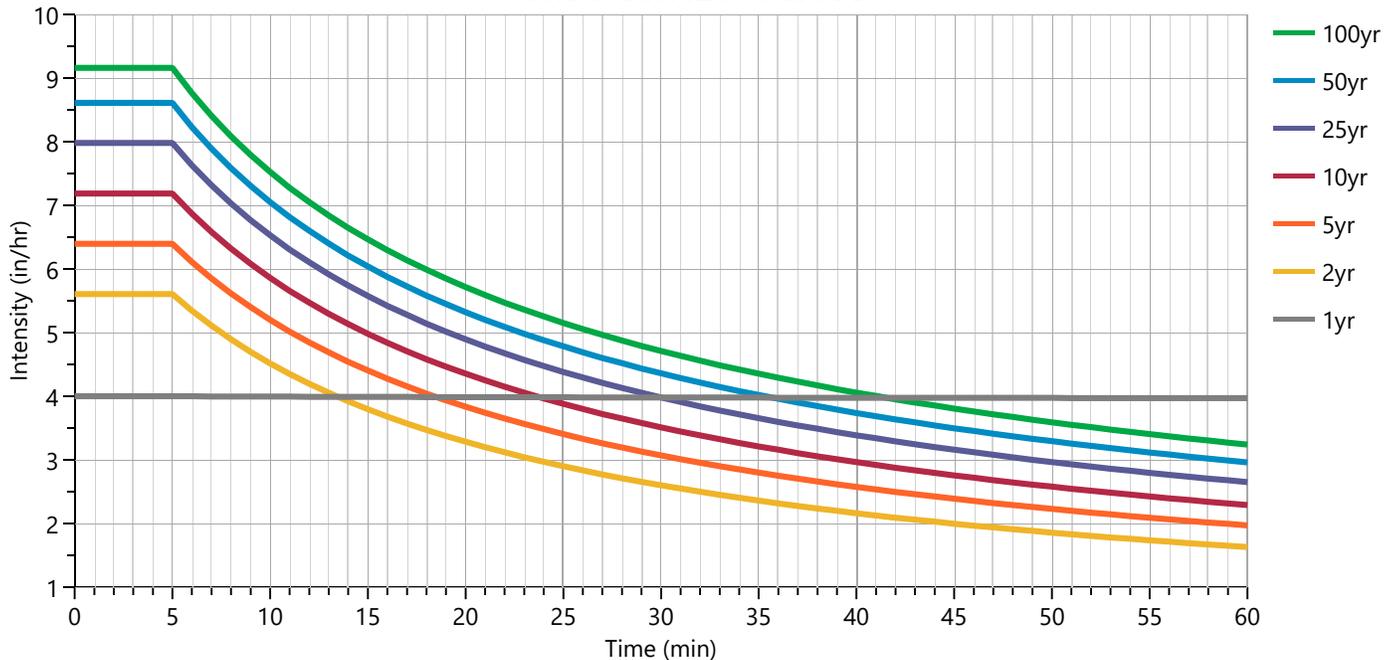
Equation Coefficients	Intensity = B / (Tc + D)^E (in/hr)								
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
<b>B</b>	4.0388	71.7923	0.0000	70.2128	67.8360	62.7327	55.6315	53.3810	
<b>D</b>	5.5000	13.0000	0.0000	12.7000	12.0000	11.1000	9.9000	9.4000	
<b>E</b>	0.0041	0.8822	0.0000	0.8337	0.7923	0.7421	0.6907	0.6608	

Minimum Tc = 5 minutes

Tc (min)	Intensity Values (in/hr)								
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
<b>Cf</b>	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
<b>5</b>	4.00	5.61	0	6.40	7.19	7.98	8.61	9.16	
<b>10</b>	3.99	4.52	0	5.20	5.86	6.53	7.05	7.52	
<b>15</b>	3.99	3.80	0	4.40	4.98	5.57	6.04	6.46	
<b>20</b>	3.99	3.28	0	3.83	4.35	4.89	5.32	5.72	
<b>25</b>	3.98	2.90	0	3.41	3.88	4.38	4.78	5.15	
<b>30</b>	3.98	2.60	0	3.07	3.51	3.98	4.36	4.71	
<b>35</b>	3.98	2.36	0	2.80	3.21	3.65	4.02	4.35	
<b>40</b>	3.98	2.16	0	2.58	2.96	3.39	3.74	4.06	
<b>45</b>	3.97	2.00	0	2.39	2.76	3.16	3.50	3.81	
<b>50</b>	3.97	1.86	0	2.23	2.58	2.97	3.29	3.59	
<b>55</b>	3.97	1.74	0	2.09	2.42	2.80	3.12	3.40	
<b>60</b>	3.97	1.63	0	1.97	2.29	2.65	2.96	3.24	

Cf = Correction Factor applied to Rational Method runoff coefficient.

## The Point IDF Curves





**NOAA Atlas 14, Volume 2, Version 3**  
**Location name: Wake Forest, North Carolina, USA\***  
**Latitude: 35.9088°, Longitude: -78.4485°**  
**Elevation: 405.98 ft\*\***



\* source: ESRI Maps  
 \*\* source: USGS

**POINT PRECIPITATION FREQUENCY ESTIMATES**

G.M. Bonnin, D. Martin, B. Lin, T. Parzybok, M.Yekta, and D. Riley

NOAA, National Weather Service, Silver Spring, Maryland

[PF\\_tabular](#) | [PF\\_graphical](#) | [Maps\\_&aerials](#)

**PF tabular**

<b>PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)<sup>1</sup></b>										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
<b>5-min</b>	<b>4.84</b> (4.43-5.29)	<b>5.62</b> (5.15-6.14)	<b>6.41</b> (5.87-6.98)	<b>7.19</b> (6.58-7.85)	<b>7.98</b> (7.27-8.70)	<b>8.62</b> (7.81-9.40)	<b>9.18</b> (8.28-10.0)	<b>9.68</b> (8.68-10.6)	<b>10.2</b> (9.10-11.2)	<b>10.7</b> (9.46-11.7)
<b>10-min</b>	<b>3.86</b> (3.54-4.23)	<b>4.49</b> (4.12-4.91)	<b>5.13</b> (4.70-5.59)	<b>5.75</b> (5.26-6.28)	<b>6.36</b> (5.80-6.94)	<b>6.86</b> (6.22-7.48)	<b>7.29</b> (6.58-7.95)	<b>7.67</b> (6.88-8.37)	<b>8.09</b> (7.19-8.84)	<b>8.45</b> (7.45-9.25)
<b>15-min</b>	<b>3.22</b> (2.95-3.52)	<b>3.77</b> (3.45-4.12)	<b>4.32</b> (3.96-4.72)	<b>4.85</b> (4.44-5.29)	<b>5.38</b> (4.90-5.86)	<b>5.79</b> (5.25-6.31)	<b>6.14</b> (5.54-6.70)	<b>6.45</b> (5.78-7.04)	<b>6.79</b> (6.04-7.42)	<b>7.07</b> (6.23-7.74)
<b>30-min</b>	<b>2.21</b> (2.02-2.42)	<b>2.60</b> (2.38-2.84)	<b>3.07</b> (2.81-3.35)	<b>3.51</b> (3.21-3.83)	<b>3.98</b> (3.63-4.34)	<b>4.36</b> (3.96-4.75)	<b>4.71</b> (4.24-5.13)	<b>5.02</b> (4.50-5.48)	<b>5.40</b> (4.80-5.90)	<b>5.73</b> (5.05-6.27)
<b>60-min</b>	<b>1.38</b> (1.26-1.51)	<b>1.63</b> (1.50-1.78)	<b>1.97</b> (1.80-2.15)	<b>2.29</b> (2.09-2.50)	<b>2.65</b> (2.41-2.89)	<b>2.96</b> (2.68-3.22)	<b>3.24</b> (2.92-3.53)	<b>3.52</b> (3.16-3.84)	<b>3.88</b> (3.45-4.23)	<b>4.18</b> (3.68-4.57)
<b>2-hr</b>	<b>0.805</b> (0.732-0.888)	<b>0.957</b> (0.874-1.05)	<b>1.17</b> (1.06-1.28)	<b>1.37</b> (1.25-1.50)	<b>1.61</b> (1.46-1.77)	<b>1.83</b> (1.64-2.00)	<b>2.03</b> (1.81-2.22)	<b>2.24</b> (1.99-2.45)	<b>2.52</b> (2.21-2.75)	<b>2.76</b> (2.40-3.02)
<b>3-hr</b>	<b>0.568</b> (0.516-0.629)	<b>0.676</b> (0.617-0.746)	<b>0.828</b> (0.753-0.913)	<b>0.980</b> (0.889-1.08)	<b>1.16</b> (1.05-1.28)	<b>1.33</b> (1.19-1.46)	<b>1.49</b> (1.33-1.64)	<b>1.66</b> (1.47-1.82)	<b>1.89</b> (1.65-2.08)	<b>2.10</b> (1.81-2.31)
<b>6-hr</b>	<b>0.342</b> (0.312-0.378)	<b>0.407</b> (0.372-0.448)	<b>0.499</b> (0.455-0.548)	<b>0.591</b> (0.537-0.648)	<b>0.705</b> (0.637-0.772)	<b>0.808</b> (0.726-0.884)	<b>0.912</b> (0.811-0.996)	<b>1.02</b> (0.900-1.11)	<b>1.17</b> (1.02-1.27)	<b>1.31</b> (1.12-1.43)
<b>12-hr</b>	<b>0.200</b> (0.183-0.221)	<b>0.238</b> (0.219-0.262)	<b>0.293</b> (0.269-0.322)	<b>0.350</b> (0.319-0.383)	<b>0.420</b> (0.381-0.459)	<b>0.485</b> (0.436-0.528)	<b>0.551</b> (0.490-0.599)	<b>0.622</b> (0.547-0.675)	<b>0.719</b> (0.622-0.781)	<b>0.809</b> (0.690-0.880)
<b>24-hr</b>	<b>0.119</b> (0.111-0.128)	<b>0.144</b> (0.134-0.155)	<b>0.181</b> (0.168-0.195)	<b>0.210</b> (0.195-0.227)	<b>0.251</b> (0.232-0.270)	<b>0.283</b> (0.261-0.304)	<b>0.316</b> (0.290-0.340)	<b>0.350</b> (0.321-0.378)	<b>0.398</b> (0.362-0.429)	<b>0.436</b> (0.395-0.471)
<b>2-day</b>	<b>0.069</b> (0.064-0.074)	<b>0.083</b> (0.078-0.090)	<b>0.104</b> (0.097-0.112)	<b>0.120</b> (0.111-0.129)	<b>0.142</b> (0.132-0.153)	<b>0.160</b> (0.147-0.172)	<b>0.178</b> (0.164-0.192)	<b>0.197</b> (0.180-0.212)	<b>0.223</b> (0.203-0.241)	<b>0.243</b> (0.220-0.263)
<b>3-day</b>	<b>0.049</b> (0.046-0.052)	<b>0.059</b> (0.055-0.063)	<b>0.073</b> (0.068-0.078)	<b>0.084</b> (0.078-0.090)	<b>0.099</b> (0.092-0.107)	<b>0.112</b> (0.103-0.120)	<b>0.124</b> (0.114-0.133)	<b>0.137</b> (0.126-0.147)	<b>0.155</b> (0.141-0.167)	<b>0.169</b> (0.154-0.183)
<b>4-day</b>	<b>0.039</b> (0.036-0.041)	<b>0.046</b> (0.043-0.050)	<b>0.057</b> (0.054-0.061)	<b>0.066</b> (0.062-0.071)	<b>0.078</b> (0.072-0.083)	<b>0.088</b> (0.081-0.094)	<b>0.097</b> (0.090-0.104)	<b>0.107</b> (0.099-0.115)	<b>0.121</b> (0.111-0.130)	<b>0.132</b> (0.120-0.142)
<b>7-day</b>	<b>0.026</b> (0.024-0.027)	<b>0.031</b> (0.029-0.033)	<b>0.037</b> (0.035-0.040)	<b>0.043</b> (0.040-0.046)	<b>0.050</b> (0.047-0.054)	<b>0.056</b> (0.052-0.060)	<b>0.062</b> (0.057-0.066)	<b>0.068</b> (0.063-0.073)	<b>0.077</b> (0.070-0.082)	<b>0.084</b> (0.076-0.090)
<b>10-day</b>	<b>0.020</b> (0.019-0.022)	<b>0.024</b> (0.023-0.026)	<b>0.029</b> (0.027-0.031)	<b>0.033</b> (0.031-0.035)	<b>0.039</b> (0.036-0.041)	<b>0.043</b> (0.040-0.046)	<b>0.047</b> (0.044-0.050)	<b>0.051</b> (0.047-0.055)	<b>0.057</b> (0.053-0.061)	<b>0.062</b> (0.057-0.066)
<b>20-day</b>	<b>0.014</b> (0.013-0.015)	<b>0.016</b> (0.015-0.017)	<b>0.019</b> (0.018-0.020)	<b>0.022</b> (0.020-0.023)	<b>0.025</b> (0.023-0.026)	<b>0.027</b> (0.025-0.029)	<b>0.030</b> (0.028-0.032)	<b>0.032</b> (0.030-0.035)	<b>0.036</b> (0.033-0.038)	<b>0.039</b> (0.036-0.041)
<b>30-day</b>	<b>0.011</b> (0.011-0.012)	<b>0.013</b> (0.013-0.014)	<b>0.016</b> (0.015-0.017)	<b>0.017</b> (0.016-0.018)	<b>0.020</b> (0.018-0.021)	<b>0.021</b> (0.020-0.023)	<b>0.023</b> (0.022-0.025)	<b>0.025</b> (0.023-0.026)	<b>0.027</b> (0.025-0.029)	<b>0.029</b> (0.027-0.031)
<b>45-day</b>	<b>0.010</b> (0.009-0.010)	<b>0.011</b> (0.011-0.012)	<b>0.013</b> (0.012-0.014)	<b>0.014</b> (0.013-0.015)	<b>0.016</b> (0.015-0.017)	<b>0.017</b> (0.016-0.018)	<b>0.018</b> (0.017-0.019)	<b>0.020</b> (0.018-0.021)	<b>0.021</b> (0.020-0.023)	<b>0.022</b> (0.021-0.024)
<b>60-day</b>	<b>0.009</b> (0.008-0.009)	<b>0.010</b> (0.010-0.011)	<b>0.011</b> (0.011-0.012)	<b>0.013</b> (0.012-0.013)	<b>0.014</b> (0.013-0.015)	<b>0.015</b> (0.014-0.016)	<b>0.016</b> (0.015-0.017)	<b>0.017</b> (0.016-0.018)	<b>0.018</b> (0.017-0.019)	<b>0.019</b> (0.018-0.020)

<sup>1</sup> Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

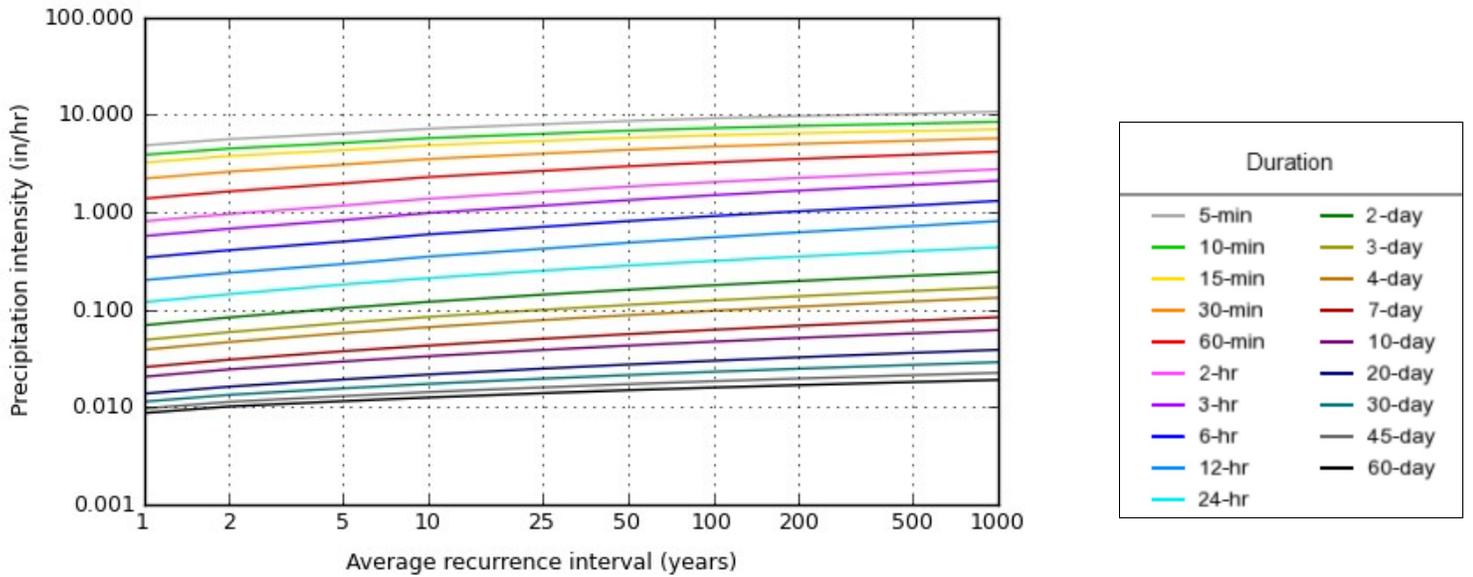
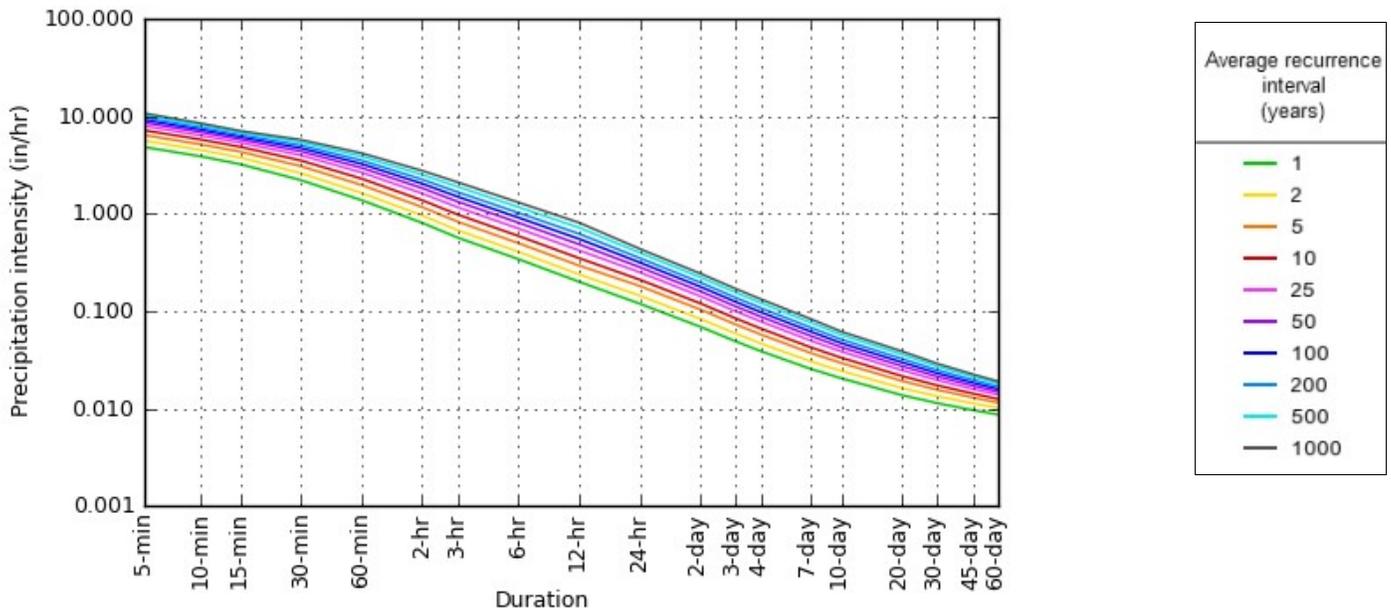
Please refer to NOAA Atlas 14 document for more information.

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**PF graphical**

PDS-based intensity-duration-frequency (IDF) curves

Latitude: 35.9088°, Longitude: -78.4485°



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**Maps & aerials**

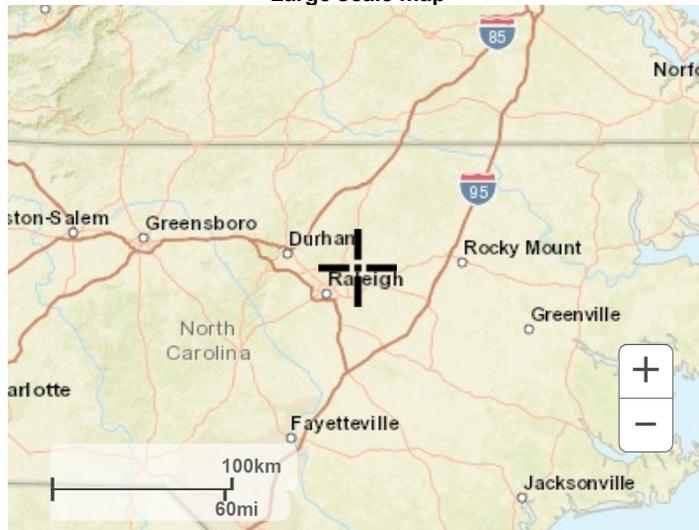
Small scale terrain



Large scale terrain



Large scale map



Large scale aerial



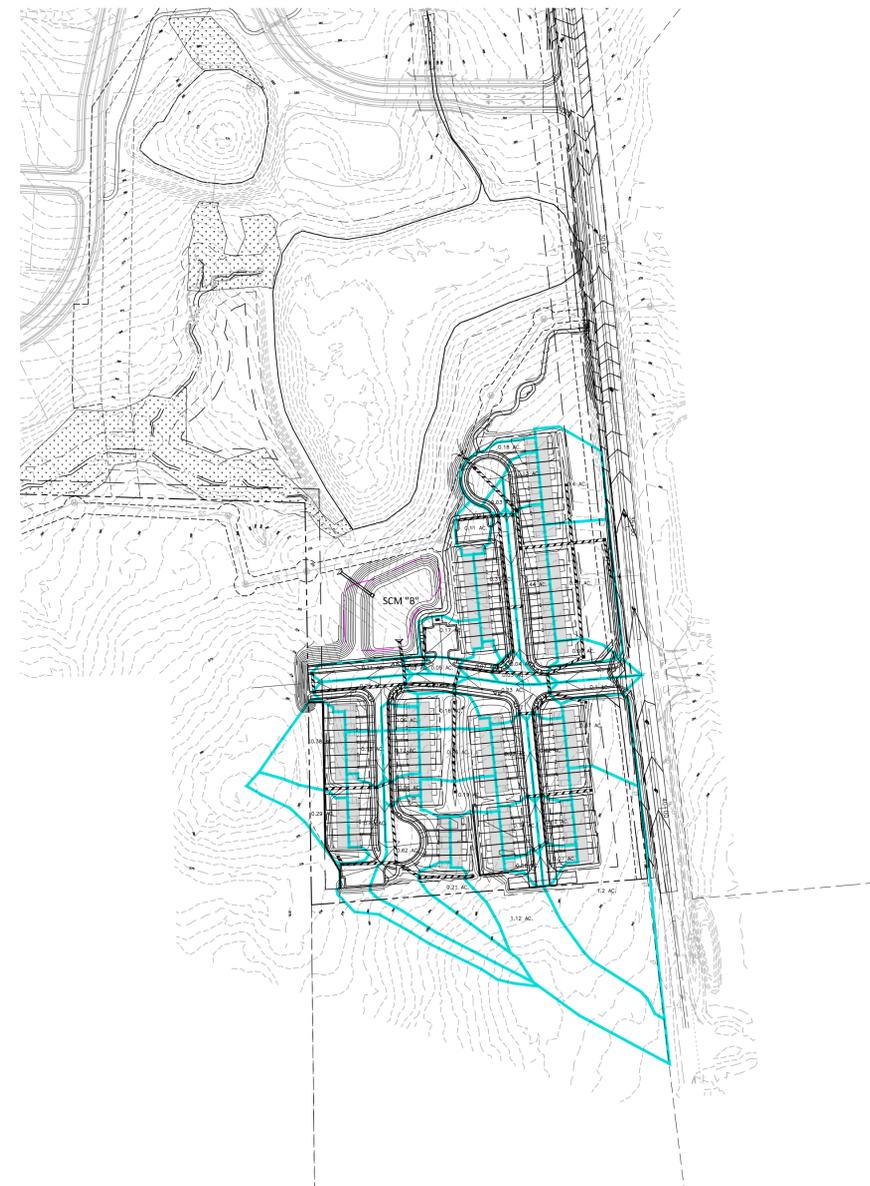
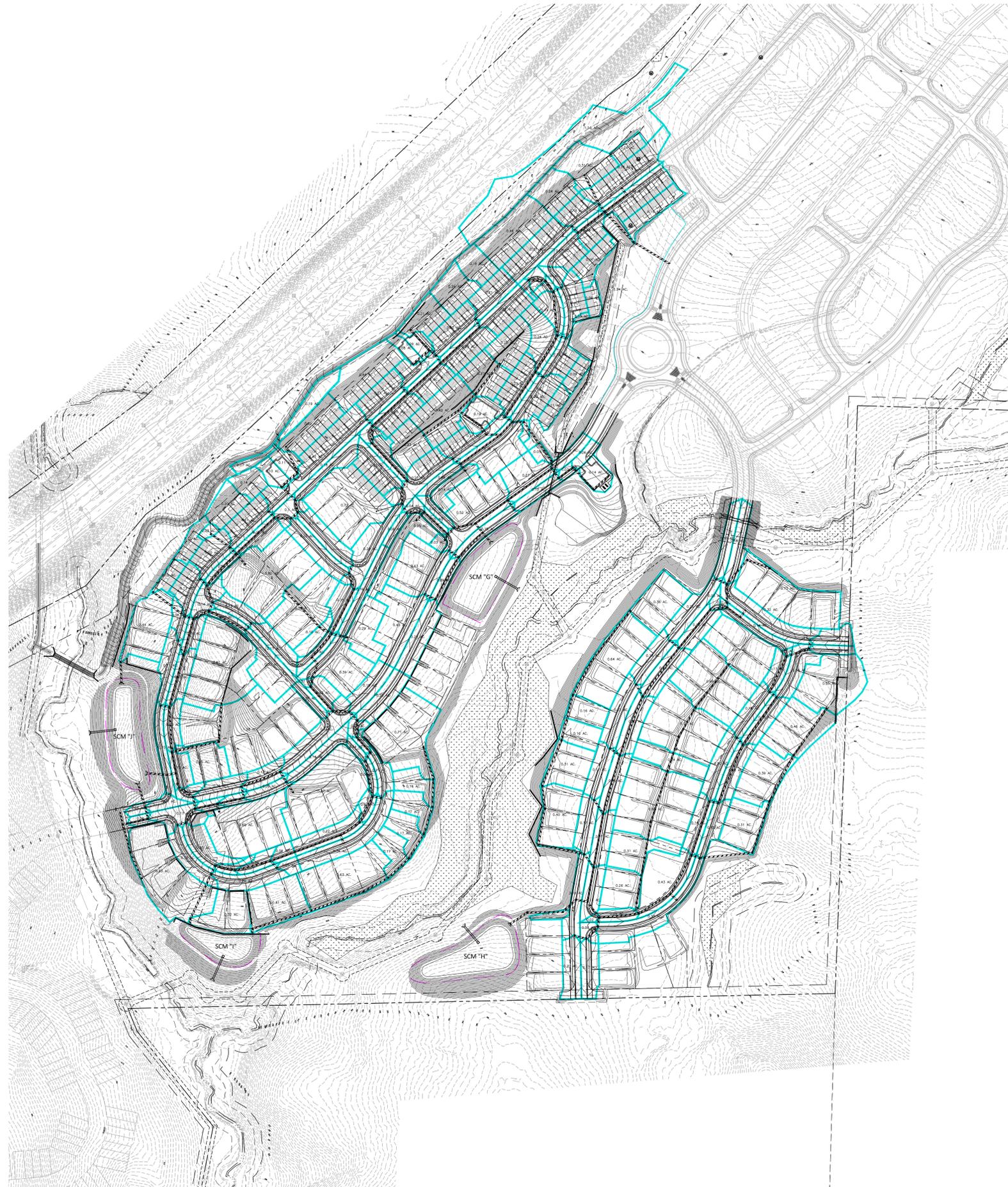
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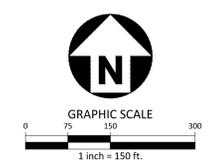
US Department of Commerce  
[National Oceanic and Atmospheric Administration](#)  
[National Weather Service](#)  
[National Water Center](#)  
1325 East West Highway  
Silver Spring, MD 20910  
Questions?: [HDSC.Questions@noaa.gov](mailto:HDSC.Questions@noaa.gov)

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*DRAINAGE AREA MAP*



M:\Projects\AshtonWoods\AWH-20000\04-Production\Engineering\Design\Files\Storm Drainage\AWH20000 SD DA Map - CD PKG 2.dwg, 7/29/2021 4:31:46 PM, C:\Daniel, Todd



FINAL DRAWING - NOT RELEASED FOR CONSTRUCTION



**McADAMS**

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ASHTON WOODS.

**THE POINT**  
**PHASES 3, 4, 5, 7 AND 10**  
**CONSTRUCTION DRAWINGS - PACKAGE 2**  
 EAST YOUNG STREET  
 TOWN OF ROLESVILLE, WAKE FOREST TOWNSHIP,  
 WAKE COUNTY, NORTH CAROLINA

**REVISIONS**

NO.	DATE

**PLAN INFORMATION**

PROJECT NO.	AWH-20000
FILENAME	AWH20000 SD DA MAP - CD PKG 2
CHECKED BY	.
DRAWN BY	.
SCALE	1"=150'
DATE	07.28.2021

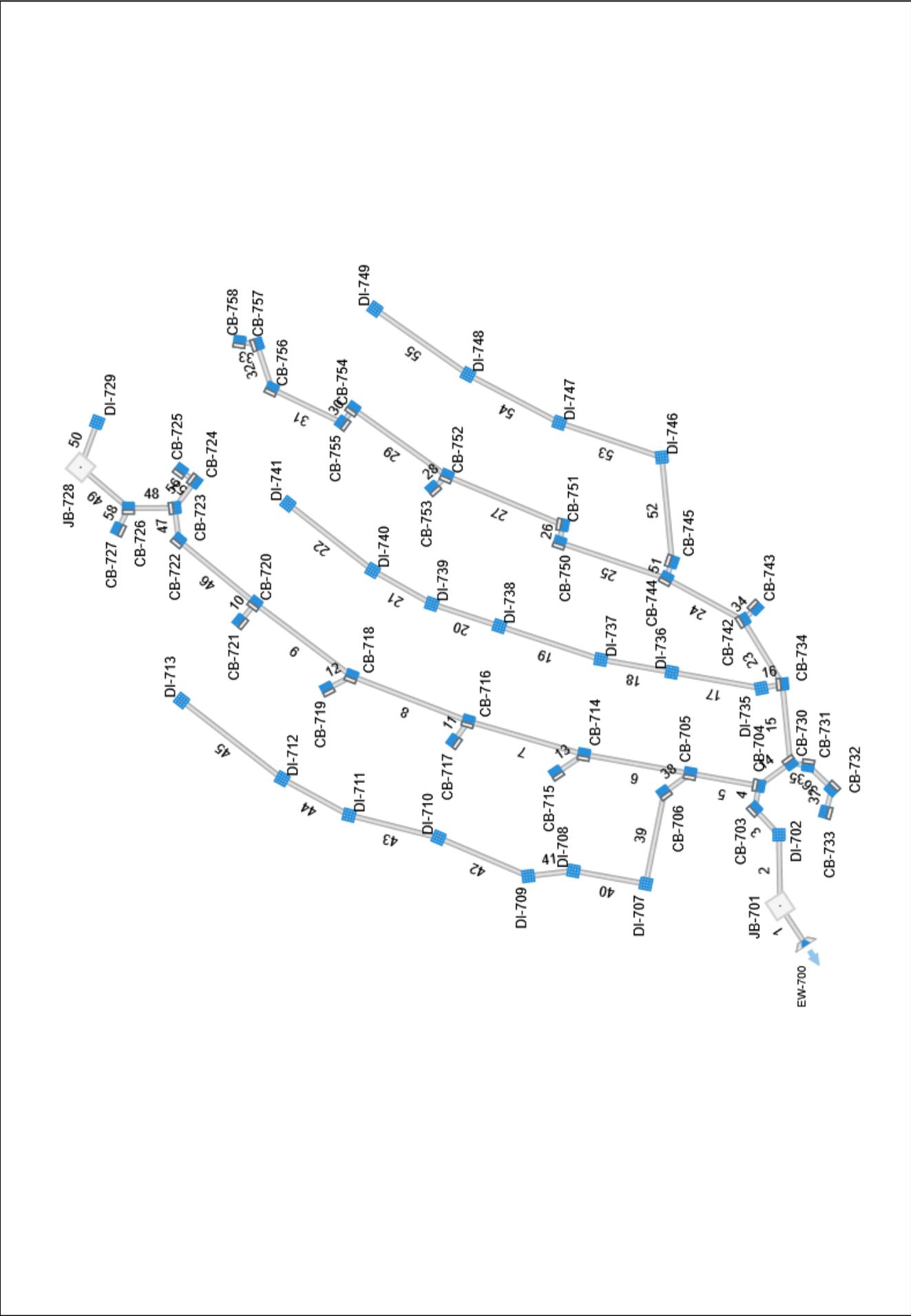
**SHEET**

**DRAINAGE AREA MAP**

**1 OF 1**

*SYSTEM 700 – REPORTS AND PROFILES*

# Plan View



# Storm Sewer Tabulation

Project Name: Storm System 700  
07-22-2021

Stormwater Studio 2021 v 3.0.0.25

Line ID	Length (ft)	Drng Area		Rational	C x A		Tc		Intensity (in/hr)	Total Q (cfs)	Capacity (cfs)	Velocity (ft/s)	Line		Invert Elev		HGL Elev		Surface Elev		Line No
		Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	
700-701	56.92	0.000	13.950	0.00	0.00	9.46	0.00	8.84	6.12	57.86	278.46	3.24	60	1.14	330.65	330.00	334.64	334.65	338.00	335.50	1
701-702	98.45	0.040	13.950	0.35	0.01	9.46	0.01	8.65	6.16	58.29	112.14	4.89	48	0.61	331.35	330.75	334.75	334.67	338.50	338.00	2
702-703	49.26	0.190	13.910	0.85	0.16	9.45	0.16	8.55	6.18	58.42	112.10	5.25	48	0.61	331.75	331.45	334.93	334.91	342.28	338.50	3
703-704	32.50	0.170	13.720	0.75	0.13	9.29	0.13	8.49	6.20	57.56	112.68	5.38	48	0.62	332.05	331.85	335.13	335.13	342.28	342.28	4
704-705	96.69	0.170	5.460	0.70	0.12	3.85	0.12	8.26	6.25	24.09	52.54	6.67	36	0.62	335.25	334.65	336.81	336.14	342.85	342.28	5
705-714	149.67	0.190	3.060	0.75	0.14	2.29	0.14	7.84	6.36	14.56	17.54	6.25	24	0.60	337.95	337.05	339.34	338.44	344.39	342.85	6
714-716	166.79	0.200	2.720	0.75	0.15	2.02	0.15	7.38	6.48	13.09	17.51	5.31	24	0.60	339.05	338.05	340.34	339.80	346.13	344.39	7
716-718	173.50	0.190	2.300	0.75	0.14	1.71	0.14	6.88	6.61	11.28	17.60	5.84	24	0.61	340.20	339.15	341.39	340.32	347.95	346.13	8
718-720	167.68	0.160	1.930	0.75	0.12	1.43	0.12	6.38	6.76	9.65	17.47	4.72	24	0.60	341.30	340.30	342.40	341.74	349.71	347.95	9
720-721	32.50	0.210	0.210	0.75	0.16	0.16	0.16	5.00	7.19	1.13	5.07	3.15	15	0.62	345.45	345.25	345.88	345.66	349.71	349.71	10
716-717	34.17	0.220	0.220	0.75	0.17	0.17	0.17	5.00	7.19	1.19	4.94	3.17	15	0.59	342.00	341.80	342.44	342.22	346.24	346.13	11
718-719	38.16	0.180	0.180	0.75	0.14	0.14	0.14	5.00	7.19	0.97	5.23	3.04	15	0.66	343.90	343.65	344.29	344.02	348.16	347.95	12
714-715	45.97	0.170	0.170	0.75	0.13	0.13	0.13	5.00	7.19	0.92	5.22	3.00	15	0.65	340.45	340.15	340.83	340.51	344.72	344.39	13
704-730	53.94	0.020	8.090	0.90	0.02	5.31	0.02	7.99	6.32	33.55	75.03	3.64	42	0.56	332.45	332.15	335.54	335.51	341.91	342.28	14
730-734	109.78	0.090	7.640	0.85	0.08	4.96	0.08	7.73	6.39	31.68	77.42	3.96	42	0.59	333.20	332.55	335.66	335.64	340.73	341.91	15
734-735	29.91	0.260	3.580	0.65	0.17	2.18	0.17	6.89	6.61	14.39	18.47	6.40	24	0.67	335.70	335.50	337.05	336.85	340.00	340.73	16
735-736	126.13	0.310	3.320	0.65	0.20	2.01	0.20	6.54	6.71	13.47	17.40	5.47	24	0.59	336.55	335.80	337.85	337.50	341.00	340.00	17
736-737	100.00	0.910	3.010	0.60	0.55	1.81	0.55	6.26	6.79	12.27	17.52	5.20	24	0.60	337.25	336.65	338.50	338.30	341.00	341.00	18
737-738	147.93	0.240	2.100	0.60	0.14	1.26	0.14	5.92	6.89	8.68	12.20	6.67	18	1.35	339.70	337.70	340.82	338.66	343.08	341.00	19
738-739	98.55	0.700	1.860	0.60	0.42	1.12	0.42	5.66	6.97	7.78	10.32	5.17	18	0.97	340.75	339.80	341.82	341.20	344.00	343.08	20
739-740	94.30	0.690	1.160	0.60	0.41	0.70	0.41	5.42	7.05	4.91	7.57	4.69	15	1.37	342.30	341.00	343.18	342.17	345.47	344.00	21
740-741	149.35	0.470	0.470	0.60	0.28	0.28	0.28	5.00	7.19	2.03	8.99	2.70	15	1.94	345.30	342.40	345.87	343.59	348.25	345.47	22

# Storm Sewer Tabulation

Project Name: Storm System 700  
07-22-2021

Stormwater Studio 2021 v 3.0.0.25

Line ID	Length (ft)	Drng Area		Rational	C x A		Tc		Intensity (in/hr)	Total Q (cfs)	Capacity (cfs)	Velocity (ft/s)	Line		Invert Elev		HGL Elev		Surface Elev		Line No
		Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	
734-742	103.90	0.430	3.970	0.55	0.24	2.71	5.0	7.46	6.46	17.49	50.68	3.08	36	0.58	333.90	333.30	335.91	335.90	339.94	340.73	23
742-744	121.34	0.160	3.210	0.75	0.12	2.22	5.0	7.13	6.55	14.51	32.24	5.95	30	0.62	334.75	334.00	336.03	335.21	341.17	339.94	24
744-750	156.13	0.200	1.190	0.75	0.15	0.90	5.0	6.78	6.64	5.98	14.31	6.25	18	1.86	339.55	336.65	340.48	337.35	344.23	341.17	25
750-751	24.78	0.180	0.990	0.75	0.14	0.75	5.0	6.69	6.67	5.00	5.02	4.67	15	0.61	339.95	339.80	340.97	340.82	344.30	344.23	26
751-752	174.34	0.160	0.810	0.75	0.12	0.62	5.0	6.28	6.79	4.18	8.95	4.17	15	1.92	343.40	340.05	344.22	341.27	347.78	344.30	27
752-753	25.55	0.160	0.160	0.75	0.12	0.12	5.0	5.00	7.19	0.86	4.95	0.82	15	0.59	343.65	343.50	344.59	344.59	347.93	347.78	28
752-754	160.11	0.190	0.490	0.75	0.14	0.38	5.0	5.84	6.92	2.60	8.62	3.23	15	1.78	346.35	343.50	347.00	344.53	350.94	347.78	29
754-755	24.50	0.110	0.300	0.75	0.08	0.23	5.0	5.72	6.95	1.62	5.05	2.42	15	0.61	346.60	346.45	347.21	347.20	350.94	350.94	30
755-756	108.78	0.010	0.190	0.85	0.01	0.15	5.0	5.35	7.07	1.06	8.97	2.39	15	1.93	348.80	346.70	349.21	347.31	353.14	350.94	31
756-757	65.25	0.070	0.180	0.85	0.06	0.14	5.0	5.15	7.14	1.01	10.42	3.96	15	2.61	350.60	348.90	351.00	349.18	355.05	353.14	32
757-758	24.63	0.110	0.110	0.75	0.08	0.08	5.0	5.00	7.19	0.59	5.00	2.60	15	0.60	350.85	350.70	351.16	350.99	355.12	355.05	33
742-743	24.50	0.330	0.330	0.77	0.25	0.25	5.0	5.00	7.19	1.83	5.05	3.63	15	0.61	335.70	335.55	336.24	336.08	339.94	339.94	34
730-731	24.84	0.060	0.430	0.85	0.05	0.33	5.0	5.32	7.08	2.33	5.02	3.93	15	0.60	337.60	337.45	338.21	338.05	341.96	341.91	35
731-732	46.32	0.170	0.370	0.75	0.13	0.28	5.0	5.17	7.13	1.98	7.65	4.21	15	1.40	338.35	337.70	338.91	338.17	343.03	341.96	36
732-733	33.86	0.200	0.200	0.75	0.15	0.15	5.0	5.00	7.19	1.08	4.96	2.20	15	0.59	338.65	338.45	339.10	339.09	342.90	343.03	37
705-706	44.85	0.170	2.210	0.70	0.12	1.44	5.0	7.71	6.39	9.22	16.89	2.99	24	0.56	335.60	335.35	337.44	337.38	343.17	342.85	38
706-707	128.90	0.010	2.040	0.45	0.00	1.32	5.0	7.33	6.49	8.60	18.83	4.03	24	0.69	336.60	335.70	337.64	337.52	342.66	343.17	39
707-708	101.91	0.400	2.030	0.65	0.26	1.32	5.0	7.02	6.57	8.68	18.08	5.38	24	0.64	337.35	336.70	338.39	337.70	342.02	342.66	40
708-709	63.24	0.310	1.630	0.65	0.20	1.06	5.0	6.82	6.63	7.03	8.35	5.30	18	0.63	337.85	337.45	338.90	338.50	343.20	342.02	41
709-710	135.20	0.160	1.320	0.65	0.10	0.86	5.0	6.36	6.76	5.80	8.08	4.16	18	0.59	338.75	337.95	339.70	339.33	346.80	343.20	42
710-711	128.00	0.160	1.160	0.65	0.10	0.75	5.0	5.89	6.90	5.20	4.94	4.55	15	0.58	339.75	339.00	340.85	340.10	345.82	346.80	43
711-712	105.51	0.640	1.000	0.65	0.42	0.65	5.0	5.51	7.02	4.56	5.08	3.89	15	0.62	340.50	339.85	341.58	341.11	343.63	345.82	44

# Storm Sewer Tabulation

Project Name: Storm System 700

Stormwater Studio 2021 v 3.0.0.25

07-22-2021

Line ID	Length (ft)	Drng Area		Rational	C x A		Tc		Intensity (in/hr)	Total Q (cfs)	Capacity (cfs)	Velocity (ft/s)	Line		Invert Elev		HGL Elev		Surface Elev		Line No
		Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	
712-713	176.71	0.360	0.360	0.65	0.23	0.23	5.0	5.00	7.19	1.68	9.28	2.43	15	2.07	344.25	340.60	344.77	341.89	347.23	343.63	45
720-722	137.27	0.030	1.560	0.90	0.03	1.15	5.0	5.94	6.89	7.92	17.27	5.17	24	0.58	342.20	341.40	343.20	342.36	351.12	349.71	46
722-723	45.36	0.010	1.530	0.90	0.01	1.12	5.0	5.81	6.93	7.78	18.39	5.16	24	0.66	342.60	342.30	343.59	343.25	350.90	351.12	47
723-726	64.18	0.180	1.060	0.85	0.15	0.76	5.0	5.59	6.99	5.28	8.29	4.94	18	0.62	343.25	342.85	344.13	343.72	351.93	350.90	48
726-728	87.10	0.000	0.730	0.00	0.00	0.47	0.0	5.25	7.10	3.37	4.91	3.63	15	0.58	343.85	343.35	344.63	344.41	351.24	351.93	49
728-729	66.54	0.730	0.730	0.65	0.47	0.47	5.0	5.00	7.19	3.41	5.00	3.41	15	0.60	344.35	343.95	345.19	345.06	347.62	351.24	50
744-745	24.50	0.150	1.860	0.75	0.11	1.20	5.0	6.55	6.71	8.02	17.70	3.06	24	0.61	335.00	334.85	336.49	336.48	341.17	341.17	51
745-746	145.43	0.310	1.710	0.65	0.20	1.08	5.0	6.08	6.85	7.42	8.04	4.76	18	0.59	335.95	335.10	337.09	336.47	339.55	341.17	52
746-747	150.00	0.390	1.400	0.65	0.25	0.88	5.0	5.74	6.95	6.13	13.69	4.41	18	1.70	338.60	336.05	339.55	337.44	342.17	339.55	53
747-748	143.15	0.460	1.010	0.65	0.30	0.63	5.0	5.44	7.04	4.43	10.24	6.35	15	2.51	342.50	338.90	343.34	339.50	345.87	342.17	54
748-749	157.73	0.550	0.550	0.60	0.33	0.33	5.0	5.00	7.19	2.37	8.60	3.01	15	1.77	345.40	342.60	346.01	343.69	348.66	345.87	55
723-724	46.14	0.140	0.460	0.85	0.12	0.36	5.0	5.11	7.15	2.57	4.94	4.04	15	0.59	346.23	345.96	346.87	346.60	350.73	350.90	56
724-725	24.50	0.320	0.320	0.75	0.24	0.24	5.0	5.00	7.19	1.72	5.05	2.32	15	0.61	346.48	346.33	347.15	347.14	350.73	350.73	57
726-727	32.49	0.150	0.150	0.85	0.13	0.13	5.0	5.00	7.19	0.92	4.94	2.93	15	0.58	347.68	347.49	348.07	347.86	351.93	351.93	58

Notes: IDF File = The Point IDF, Return Period = 10-yrs.

Project File: Storm System 700.sws

# Energy Grade Line Calculations

Project Name: Storm System 700  
07-22-2021

Stormwater Studio 2021 v 3.0.0.25

Line No	Line Size (in)	Q (cfs)	Downstream						Length (ft)	Upstream							Pipe		Junction			
			Invert Elev (ft)	Depth (ft)	Area (sqft)	HGL Elev (ft)	Vel (ft/s)	Vel Head (ft)		EGL Elev (ft)	Invert Elev (ft)	Depth (ft)	Area (sqft)	HGL Elev (ft)	Vel (ft/s)	Vel Head (ft)	EGL Elev (ft)	n Value	Energy Loss (ft)	HGLa Elev (ft)	EGLa Elev (ft)	Energy Loss (ft)
1	60	57.86	330.00	4.65	19.03	334.65	3.04	0.14	334.79	56.92	330.65	3.99	16.80	334.64	3.44	0.18	334.82	0.013	0.031	334.69	334.88	0.05
2	48	58.29	330.75	3.92	12.51	334.67	4.66	0.34	335.01	98.45	331.35	3.40	11.38	334.75	5.12	0.41	335.16	0.013	0.147	334.76	335.17	0.01
3	48	58.42	331.45	3.46	11.56	334.91	5.05	0.40	335.31	49.26	331.75	3.18	10.71	334.93	5.45	0.46	335.39	0.013	0.082	334.95	335.41	0.02
4	48	57.56	331.85	3.28	11.03	335.13	5.22	0.42	335.55	32.50	332.05	3.08	10.39	335.13	5.54	0.48	335.61	0.013	0.056	335.15	335.63	0.02
5	36	24.09	334.65	1.49†	3.51	336.14	6.87	0.73	336.86	96.69	335.25	1.56‡	3.73	336.81	6.46	0.65	337.46	0.013	0.600	336.81	337.46	0.00
6	24	14.56	337.05	1.39‡	2.33	338.44	6.24	0.61	339.05	149.67	337.95	1.39	2.33	339.34	6.25	0.61	339.95	0.013	0.900	339.40	340.01	0.07
7	24	13.09	338.05	1.75	2.92	339.80	4.48	0.31	340.12	166.79	339.05	1.29	2.14	340.34	6.13	0.58	340.92	0.013	0.804	340.40	340.99	0.07
8	24	11.28	339.15	1.17‡	1.92	340.32	5.89	0.54	341.07	173.50	340.20	1.19‡	1.95	341.39	5.79	0.52	341.91	0.013	0.842	341.39	341.91	0.00
9	24	9.65	340.30	1.44	2.41	341.74	4.00	0.25	341.98	167.68	341.30	1.10‡	1.77	342.40	5.45	0.46	342.86	0.013	0.878	342.40	342.86	0.00
10	15	1.13	345.25	0.41‡	0.35	345.66	3.26	0.17	345.82	32.50	345.45	0.43	0.37	345.88	3.04	0.14	346.02	0.013	0.200	345.96	346.10	0.08
11	15	1.19	341.80	0.42‡	0.36	342.22	3.25	0.16	342.39	34.17	342.00	0.44	0.38	342.44	3.09	0.15	342.59	0.013	0.200	342.52	342.67	0.08
12	15	0.97	343.65	0.37‡	0.31	344.02	3.16	0.16	344.18	38.16	343.90	0.39‡	0.33	344.29	2.92	0.13	344.43	0.013	0.250	344.29	344.43	0.00
13	15	0.92	340.15	0.36‡	0.29	340.51	3.12	0.15	340.66	45.97	340.45	0.38‡	0.32	340.83	2.87	0.13	340.96	0.013	0.300	340.83	340.96	0.00
14	42	33.55	332.15	3.36	9.49	335.51	3.54	0.19	335.70	53.94	332.45	3.09	8.98	335.54	3.74	0.22	335.75	0.013	0.051	335.54	335.76	0.01
15	42	31.68	332.55	3.09	8.99	335.64	3.53	0.19	335.83	109.78	333.20	2.46	7.21	335.66	4.39	0.30	335.96	0.013	0.124	335.67	335.97	0.01
16	24	14.39	335.50	1.34'	2.24	336.85	6.41	0.64	337.49	29.91	335.70	1.35	2.25	337.05	6.39	0.63	337.69	0.013	0.199	337.10	337.74	0.05
17	24	13.47	335.80	1.70	2.84	337.50	4.74	0.35	337.85	126.13	336.55	1.30	2.17	337.85	6.21	0.60	338.45	0.013	0.605	337.91	338.51	0.06
18	24	12.27	336.65	1.65	2.77	338.30	4.43	0.30	338.60	100.00	337.25	1.25	2.06	338.50	5.96	0.55	339.05	0.013	0.445	338.57	339.13	0.08
19	18	8.68	337.70	0.96‡	1.20	338.66	7.24	0.81	339.41	147.93	339.70	1.12‡	1.42	340.82	6.11	0.58	341.40	0.013	1.994	340.82	341.40	0.00
20	18	7.78	339.80	1.40	1.72	341.20	4.53	0.32	341.52	98.55	340.75	1.06‡	1.34	341.82	5.80	0.52	342.34	0.013	0.820	341.82	342.34	0.00
21	15	4.91	341.00	1.17	1.20	342.17	4.10	0.26	342.43	94.30	342.30	0.89‡	0.93	343.18	5.27	0.43	343.61	0.013	1.180	343.18	343.61	0.00
22	15	2.03	342.40	1.19	1.20	343.59	1.68	0.04	343.63	149.35	345.30	0.57‡	0.54	345.87	3.72	0.22	346.08	0.013	2.450	345.87	346.08	0.00

Notes: Return Period = 10-yrs. † Critical depth. ‡ Critical depth. † Normal depth. ‡ Supercritical.

Project File: Storm System 700.sww

# Energy Grade Line Calculations

Project Name: Storm System 700  
07-22-2021

Stormwater Studio 2021 v 3.0.0.25

Line No	Line Size (in)	Q (cfs)	Downstream						Length (ft)	Upstream							Pipe		Junction			
			Invert Elev (ft)	Depth (ft)	Area (sqft)	HGL Elev (ft)	Vel (ft/s)	Vel Head (ft)		EGL Elev (ft)	Invert Elev (ft)	Depth (ft)	Area (sqft)	HGL Elev (ft)	Vel (ft/s)	Vel Head (ft)	EGL Elev (ft)	n Value	Energy Loss (ft)	HGLa Elev (ft)	EGLa Elev (ft)	Energy Loss (ft)
23	36	17.49	333.30	2.60	6.50	335.90	2.69	0.11	336.01	103.90	333.90	2.01	5.04	335.91	3.47	0.19	336.10	0.013	0.091	335.92	336.11	0.01
24	30	14.51	334.00	1.21 <sup>‡</sup>	2.36	335.21	6.15	0.59	336.17	121.34	334.75	1.28	2.53	336.03	5.74	0.51	336.54	0.013	0.367	336.06	336.57	0.03
25	18	5.98	336.65	0.70 <sup>‡</sup>	0.82	337.35	7.34	0.84	338.00	156.13	339.55	0.93 <sup>‡</sup>	1.16	340.48	5.17	0.42	340.90	0.013	2.900	340.48	340.90	0.00
26	15	5.00	339.80	1.02 <sup>‡</sup>	1.07	340.82	4.67	0.34	341.16	24.78	339.95	1.02	1.07	340.97	4.67	0.34	341.31	0.013	0.150	341.04	341.38	0.07
27	15	4.18	340.05	1.22	1.22	341.27	3.42	0.18	341.45	174.34	343.40	0.82 <sup>‡</sup>	0.85	344.22	4.91	0.37	344.59	0.013	3.139	344.22	344.59	0.00
28	15	0.86	343.50	1.09	1.13	344.59	0.76	0.01	344.60	25.55	343.65	0.94	0.99	344.59	0.87	0.01	344.60	0.013	0.006	344.60	344.61	0.01
29	15	2.60	343.50	1.03	1.08	344.53	2.40	0.09	344.62	160.11	346.35	0.65 <sup>‡</sup>	0.64	347.00	4.07	0.26	347.25	0.013	2.630	347.00	347.25	0.00
30	15	1.62	346.45	0.75	0.77	347.20	2.09	0.07	347.27	24.50	346.60	0.61	0.59	347.21	2.75	0.12	347.32	0.013	0.051	347.23	347.35	0.03
31	15	1.06	346.70	0.61	0.60	347.31	1.78	0.05	347.36	108.78	348.80	0.41 <sup>‡</sup>	0.35	349.21	3.01	0.14	349.35	0.013	1.992	349.21	349.35	0.00
32	15	1.01	348.90	0.28 <sup>‡</sup>	0.20	349.18	4.95	0.38	349.44	65.25	350.60	0.40 <sup>‡</sup>	0.34	351.00	2.96	0.14	351.14	0.013	1.700	351.00	351.14	0.00
33	15	0.59	350.70	0.29 <sup>‡</sup>	0.22	350.99	2.71	0.11	351.15	24.63	350.85	0.31	0.24	351.16	2.49	0.10	351.26	0.013	0.110	351.22	351.31	0.06
34	15	1.83	335.55	0.53 <sup>‡</sup>	0.49	336.08	3.71	0.21	336.29	24.50	335.70	0.54	0.51	336.24	3.56	0.20	336.44	0.013	0.150	336.37	336.57	0.13
35	15	2.33	337.45	0.60 <sup>‡</sup>	0.59	338.05	3.97	0.25	338.30	24.84	337.60	0.61	0.60	338.21	3.88	0.23	338.45	0.013	0.150	338.24	338.47	0.03
36	15	1.98	337.70	0.47 <sup>‡</sup>	0.42	338.17	4.73	0.35	338.50	46.32	338.35	0.56 <sup>‡</sup>	0.54	338.91	3.69	0.21	339.12	0.013	0.623	338.91	339.12	0.00
37	15	1.08	338.45	0.64	0.64	339.09	1.70	0.04	339.14	33.86	338.65	0.45	0.40	339.10	2.70	0.11	339.21	0.013	0.077	339.16	339.27	0.06
38	24	9.22	335.35	2.00	3.14	337.38	2.94	0.13	337.52	44.85	335.60	1.84	3.03	337.44	3.05	0.14	337.59	0.013	0.069	337.45	337.60	0.01
39	24	8.60	335.70	1.81	2.99	337.52	2.87	0.13	337.65	128.90	336.60	1.04	1.66	337.64	5.19	0.42	338.06	0.013	0.413	337.66	338.07	0.02
40	24	8.68	336.70	1.00 <sup>‡</sup>	1.57	337.70	5.53	0.48	338.17	101.91	337.35	1.04 <sup>‡</sup>	1.66	338.39	5.24	0.43	338.82	0.013	0.652	338.39	338.82	0.00
41	18	7.03	337.45	1.05 <sup>‡</sup>	1.33	338.50	5.29	0.44	338.94	63.24	337.85	1.05	1.33	338.90	5.30	0.44	339.34	0.013	0.399	339.01	339.44	0.11
42	18	5.80	337.95	1.38	1.70	339.33	3.41	0.18	339.51	135.20	338.75	0.95	1.18	339.70	4.90	0.37	340.08	0.013	0.567	339.79	340.17	0.09
43	15	5.20	339.00	1.10 <sup>‡</sup>	1.14	340.10	4.55	0.32	340.42	128.00	339.75	1.10	1.14	340.85	4.55	0.32	341.17	0.013	0.748	340.92	341.24	0.07
44	15	4.56	339.85	1.25	1.23	341.11	3.72	0.21	341.33	105.51	340.50	1.08	1.12	341.58	4.06	0.26	341.83	0.013	0.507	341.65	341.90	0.07

Notes: Return Period = 10-yrs. <sup>‡</sup> Critical depth. <sup>‡</sup> Normal depth. <sup>‡</sup> Supercritical.

# Energy Grade Line Calculations

Project Name: Storm System 700  
07-22-2021

Stormwater Studio 2021 v 3.0.0.25

Line No	Line Size (in)	Q (cfs)	Downstream						Length (ft)	Upstream							Pipe		Junction			
			Invert Elev (ft)	Depth (ft)	Area (sqft)	HGL Elev (ft)	Vel (ft/s)	Vel Head (ft)		EGL Elev (ft)	Invert Elev (ft)	Depth (ft)	Area (sqft)	HGL Elev (ft)	Vel (ft/s)	Vel Head (ft)	EGL Elev (ft)	n Value	Energy Loss (ft)	HGLa Elev (ft)	EGLa Elev (ft)	Energy Loss (ft)
45	15	1.68	340.60	1.25	1.23	341.89	1.37	0.03	341.91	176.71	344.25	0.52 <sup>2</sup>	0.48	344.77	3.49	0.19	344.96	0.013	3.045	344.77	344.96	0.00
46	24	7.92	341.40	0.96 <sup>‡</sup>	1.50	342.36	5.28	0.43	342.92	137.27	342.20	1.00 <sup>2</sup>	1.56	343.20	5.06	0.40	343.60	0.013	0.676	343.20	343.60	0.00
47	24	7.78	342.30	0.95 <sup>‡</sup>	1.47	343.25	5.29	0.44	343.68	45.36	342.60	0.99 <sup>2</sup>	1.55	343.59	5.03	0.39	343.98	0.013	0.300	343.59	343.98	0.00
48	18	5.28	342.85	0.87 <sup>‡</sup>	1.07	343.72	4.95	0.38	344.13	64.18	343.25	0.88 <sup>2</sup>	1.07	344.13	4.92	0.38	344.50	0.013	0.375	344.13	344.50	0.00
49	15	3.37	343.35	1.06	1.11	344.41	3.04	0.14	344.55	87.10	343.85	0.77	0.80	344.63	4.22	0.28	344.90	0.013	0.352	344.87	345.15	0.25
50	15	3.41	343.95	1.11	1.15	345.06	2.96	0.14	345.20	66.54	344.35	0.84	0.88	345.19	3.87	0.23	345.43	0.013	0.229	345.33	345.56	0.14
51	24	8.02	334.85	1.63	2.75	336.48	2.92	0.13	336.62	24.50	335.00	1.49	2.51	336.49	3.19	0.16	336.65	0.013	0.034	336.50	336.66	0.01
52	18	7.42	335.10	1.37	1.69	336.47	4.38	0.30	336.77	145.43	335.95	1.14	1.44	337.09	5.14	0.41	337.50	0.013	0.736	337.16	337.57	0.06
53	18	6.13	336.05	1.39	1.71	337.44	3.59	0.20	337.64	150.00	338.60	0.95 <sup>2</sup>	1.17	339.55	5.23	0.42	339.97	0.013	2.331	339.55	339.97	0.00
54	15	4.43	338.90	0.60 <sup>‡</sup>	0.58	339.50	7.67	0.91	340.15	143.15	342.50	0.84 <sup>2</sup>	0.88	343.34	5.04	0.39	343.74	0.013	3.589	343.34	343.74	0.00
55	15	2.37	342.60	1.09	1.14	343.69	2.09	0.07	343.76	157.73	345.40	0.62 <sup>2</sup>	0.60	346.01	3.93	0.24	346.25	0.013	2.494	346.01	346.25	0.00
56	15	2.57	345.96	0.64 <sup>‡</sup>	0.63	346.60	4.06	0.26	346.86	46.14	346.23	0.64	0.64	346.87	4.02	0.25	347.13	0.013	0.270	346.93	347.19	0.06
57	15	1.72	346.33	0.81	0.84	347.14	2.05	0.07	347.21	24.50	346.48	0.67	0.66	347.15	2.60	0.10	347.25	0.013	0.044	347.22	347.32	0.07
58	15	0.92	347.49	0.37 <sup>‡</sup>	0.30	347.86	3.02	0.14	348.00	32.49	347.68	0.39	0.32	348.07	2.84	0.13	348.19	0.013	0.190	348.13	348.26	0.07

Notes: Return Period = 10-yrs. <sup>2</sup> Critical depth. <sup>‡</sup> Supercritical.

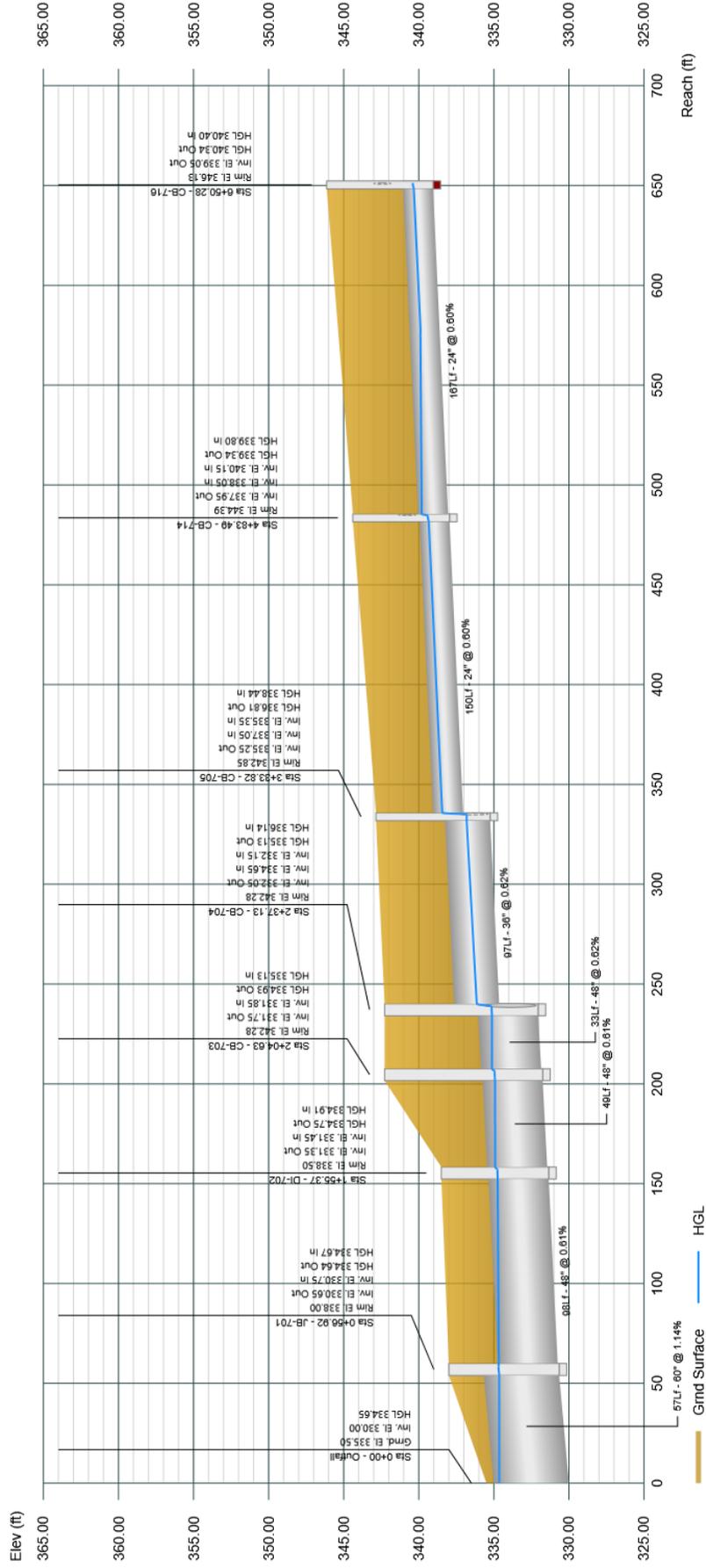
Project File: Storm System 700.sws

# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 700

07-22-2021

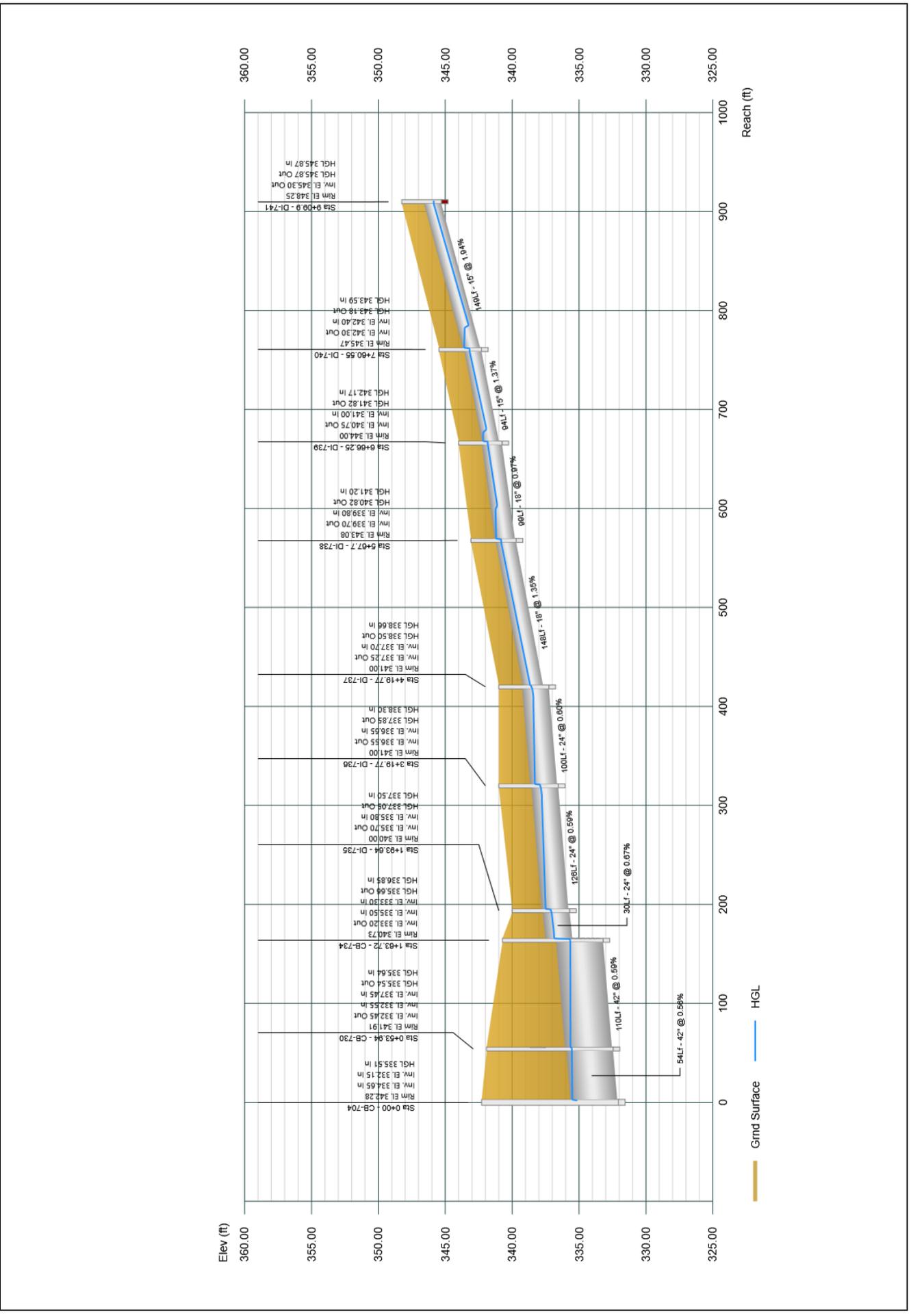


# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 700

07-22-2021

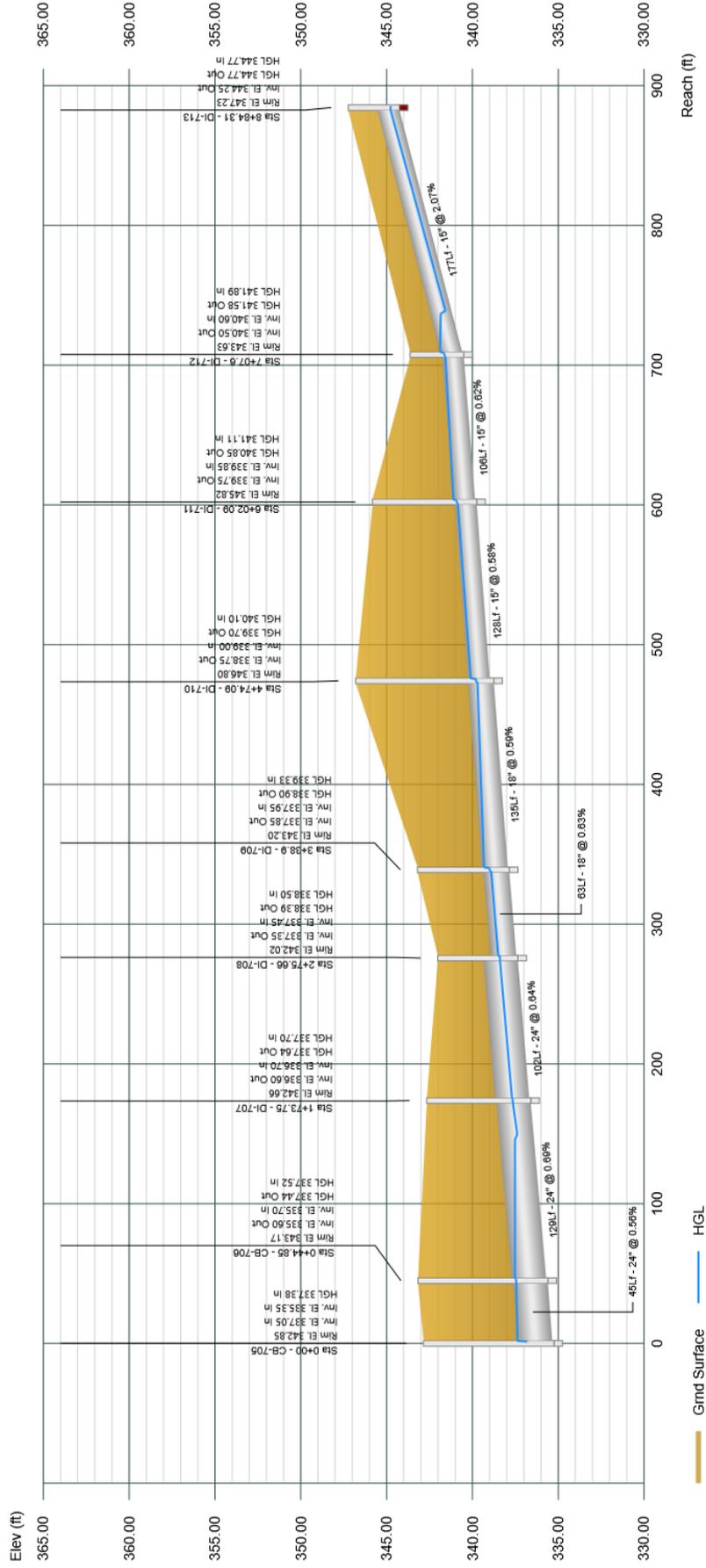


# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 700

07-22-2021

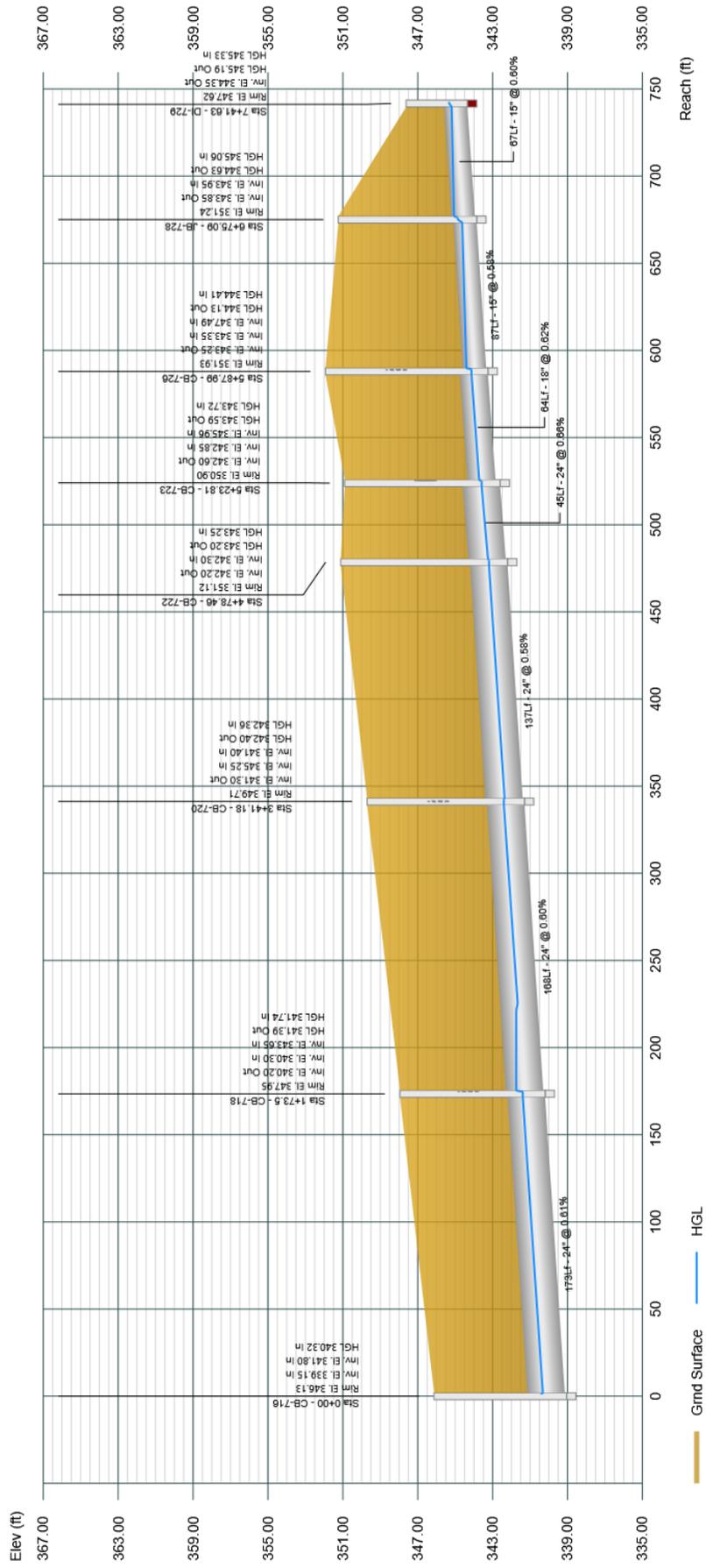


# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 700

07-22-2021

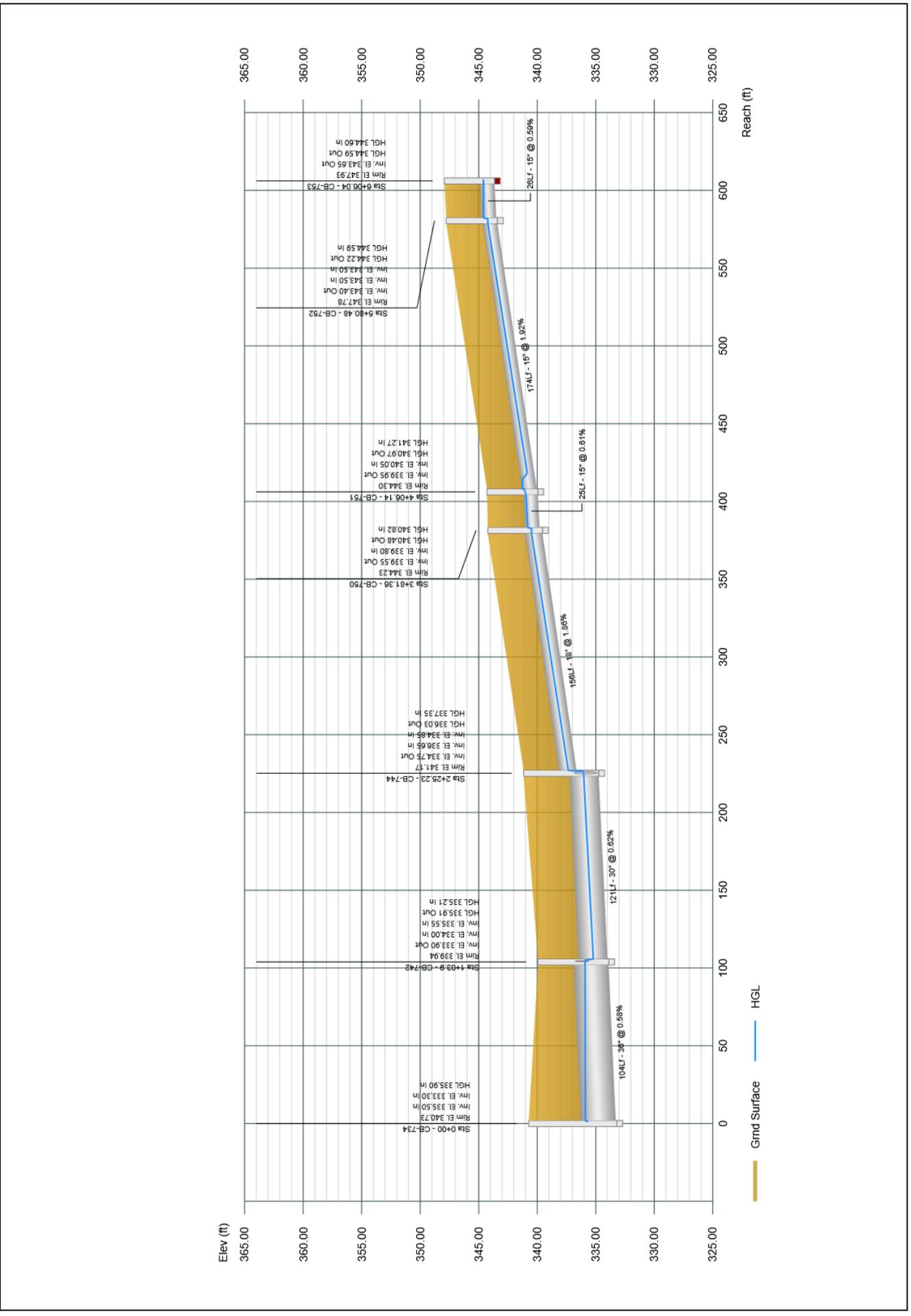


# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 700

07-22-2021

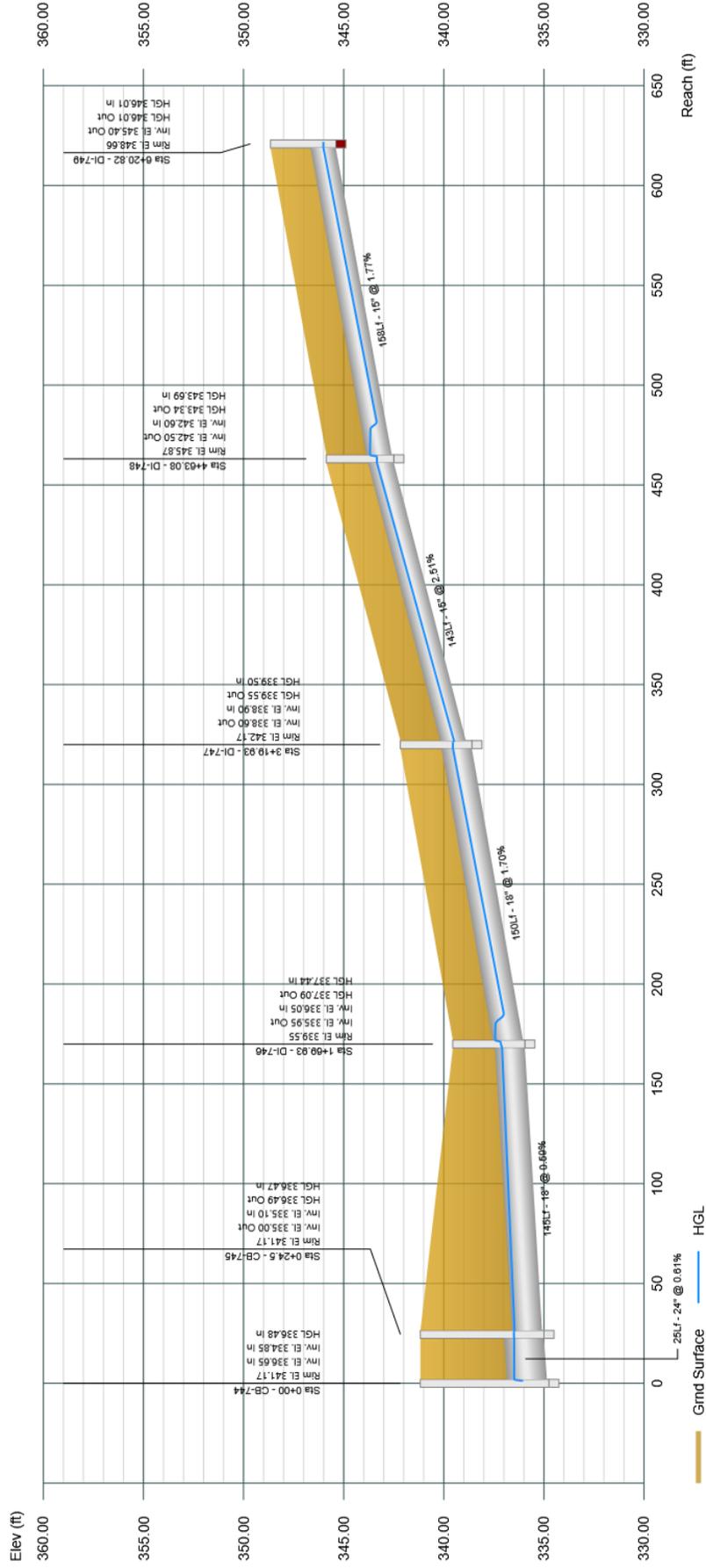


# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 700

07-22-2021

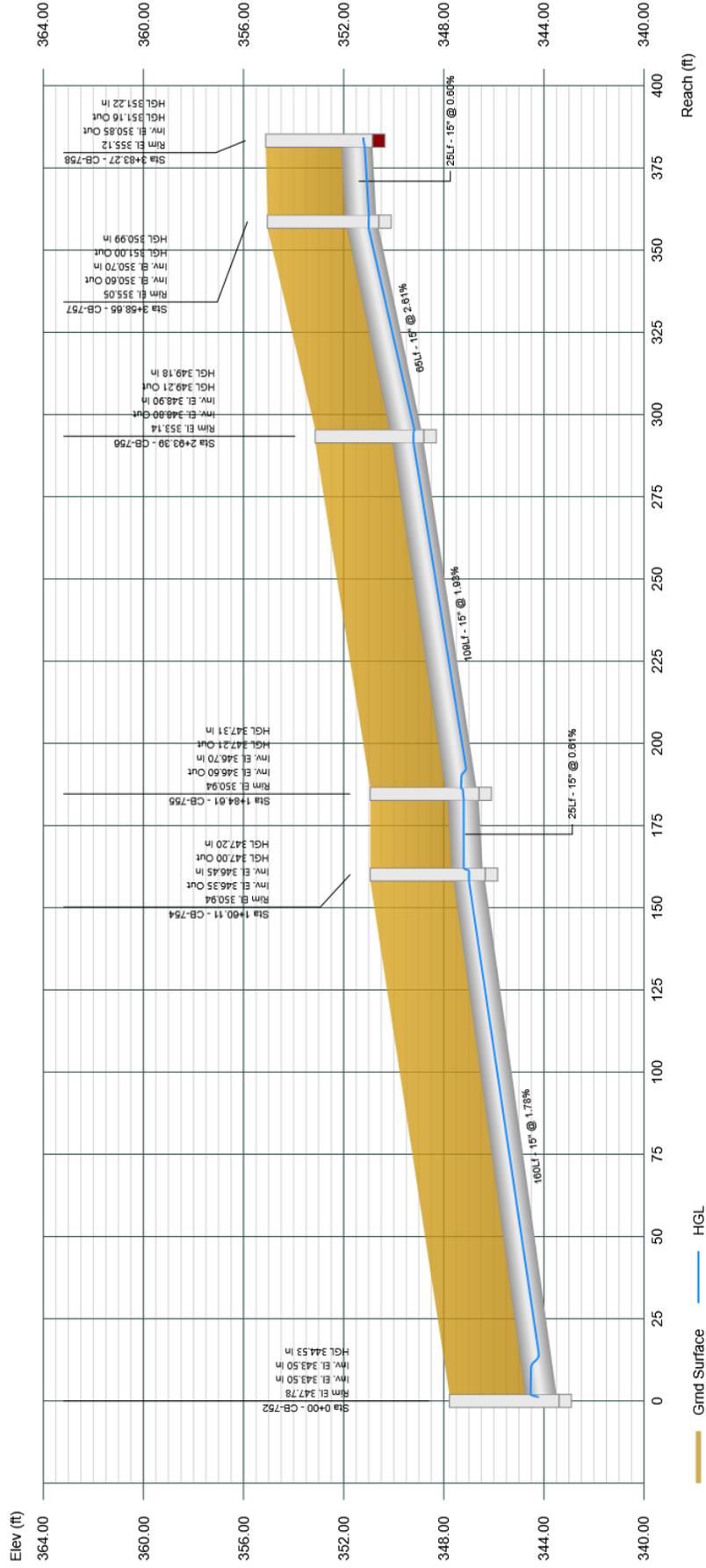


# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 700

07-22-2021



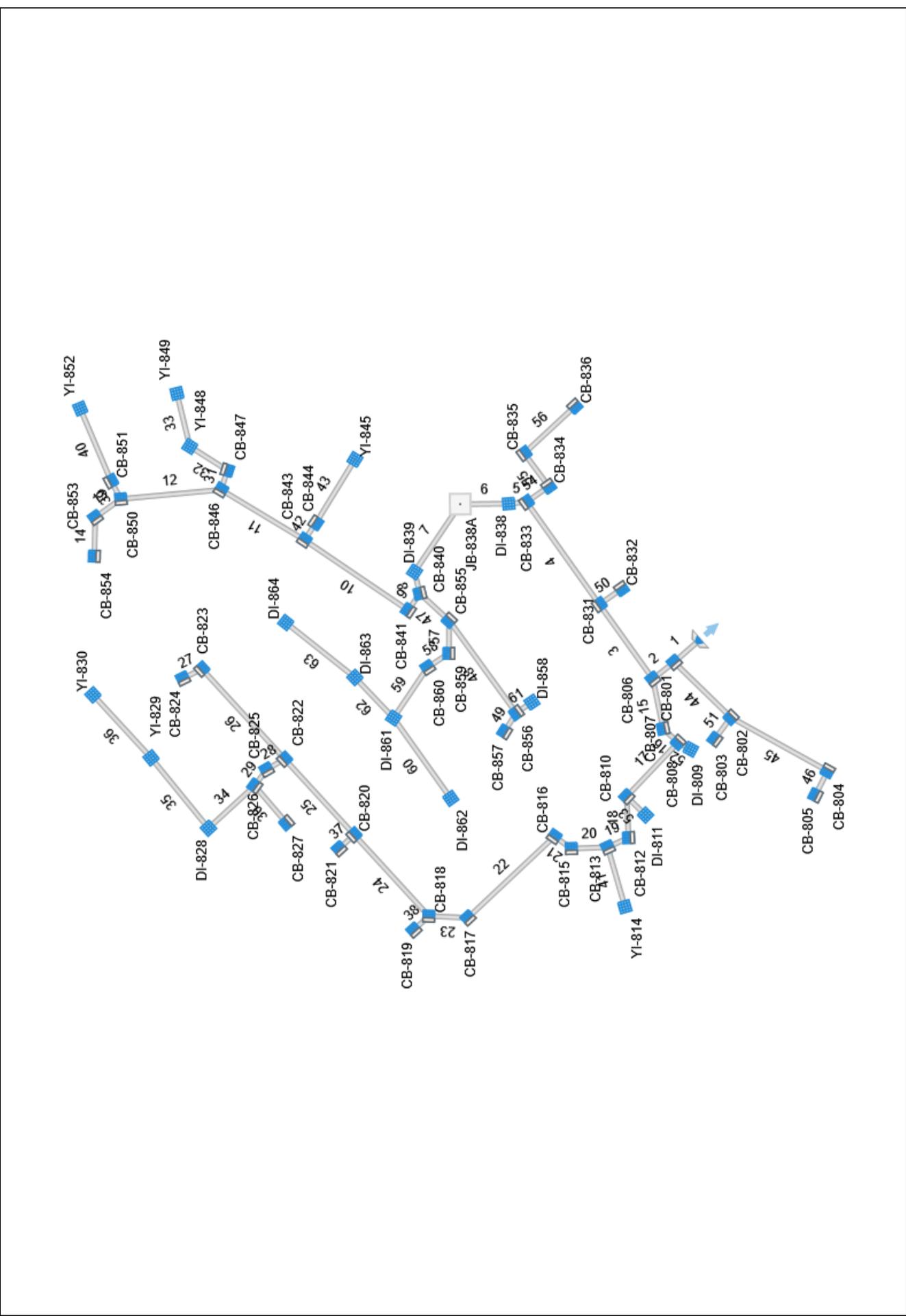
# *SYSTEM 800 – REPORTS AND PROFILES*

# Plan View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 800

07-22-2021



# Storm Sewer Tabulation

Project Name: Storm System 800  
07-22-2021

Stormwater Studio 2021 v 3.0.0.25

Line ID	Length (ft)	Drng Area		Rational	C x A		Tc		Intensity (in/hr)	Total Q (cfs)	Capacity (cfs)	Velocity (ft/s)	Line		Invert Elev		HGL Elev		Surface Elev		Line No
		Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	
800-801	34.27	0.150	11.040	0.85	0.13	7.60	5.0	8.35	6.23	47.36	246.03	2.61	60	0.89	340.30	340.00	344.51	344.51	350.83	348.00	1
801-806	32.50	0.520	9.700	0.65	0.34	6.67	5.0	8.28	6.25	41.67	201.76	2.32	60	0.60	340.60	340.40	344.81	344.81	350.83	350.83	2
806-831	109.69	0.270	4.950	0.70	0.19	3.36	5.0	7.99	6.32	21.23	151.38	1.40	54	0.59	341.35	340.70	345.19	345.18	351.34	350.83	3
831-833	150.51	0.090	4.580	0.85	0.08	3.09	5.0	7.60	6.42	19.81	75.60	2.28	42	0.56	342.55	341.70	345.24	345.21	352.86	351.34	4
833-838	21.63	0.050	4.260	0.65	0.03	2.81	5.0	7.55	6.43	18.10	55.50	2.75	36	0.69	342.80	342.65	345.36	345.36	352.69	352.86	5
838-838A	58.05	0.050	4.210	0.65	0.03	2.78	5.0	7.40	6.47	18.00	51.89	2.96	36	0.61	343.25	342.90	345.51	345.50	349.40	352.69	6
838A-839	97.80	0.050	4.160	0.65	0.03	2.75	5.0	7.14	6.54	17.98	30.78	4.22	30	0.56	343.90	343.35	345.75	345.66	351.75	349.40	7
839-840	26.56	0.220	4.110	0.75	0.17	2.72	5.0	7.07	6.56	17.82	30.57	4.07	30	0.56	344.15	344.00	346.18	346.15	350.96	351.75	8
840-841	24.53	0.230	1.470	0.75	0.17	0.99	5.0	6.99	6.58	6.54	8.21	5.16	18	0.61	346.35	346.20	347.36	347.21	350.94	350.96	9
841-843	150.16	0.240	1.240	0.45	0.11	0.82	5.0	6.68	6.67	5.48	15.68	6.30	18	2.23	349.80	346.45	350.69	347.09	355.51	350.94	10
843-846	116.61	0.140	0.760	0.65	0.09	0.53	5.0	6.24	6.80	3.62	5.00	4.44	15	0.60	351.96	351.26	352.75	352.05	360.89	355.51	11
846-850	120.60	0.040	0.330	0.70	0.03	0.23	5.0	5.68	6.97	1.58	5.09	3.53	15	0.62	356.25	355.50	356.75	355.98	365.80	360.89	12
850-853	37.74	0.040	0.070	0.65	0.03	0.05	5.0	5.42	7.05	0.34	5.04	2.25	15	0.61	361.78	361.55	362.01	361.77	366.53	365.80	13
853-854	46.50	0.030	0.030	0.75	0.02	0.02	5.0	5.00	7.19	0.16	5.01	1.76	15	0.60	362.56	362.28	362.72	362.44	367.47	366.53	14
806-807	60.77	0.070	4.230	0.85	0.06	2.97	5.0	7.98	6.32	18.78	32.00	6.44	30	0.61	344.43	344.06	345.88	345.48	351.32	350.83	15
807-808	24.50	0.050	4.160	0.85	0.04	2.91	5.0	7.92	6.34	18.45	31.00	4.54	30	0.57	344.67	344.53	346.54	346.53	351.32	351.32	16
808-810	89.38	0.040	4.060	0.90	0.04	2.85	5.0	7.68	6.40	18.23	31.88	4.44	30	0.60	345.31	344.77	347.07	347.00	353.94	351.32	17
810-812	49.34	0.060	3.790	0.85	0.05	2.70	5.0	7.55	6.43	17.37	31.77	6.25	30	0.60	348.74	348.44	350.13	349.81	355.94	353.94	18
812-813	27.41	0.240	3.730	0.70	0.17	2.65	5.0	7.48	6.45	17.09	32.30	6.16	30	0.62	349.40	349.23	350.79	350.60	355.73	355.94	19
813-815	43.53	0.220	2.770	0.75	0.17	2.01	5.0	7.36	6.48	13.05	17.48	6.13	24	0.60	350.16	349.90	351.45	351.18	355.39	355.73	20
815-816	24.99	0.110	2.550	0.78	0.09	1.85	5.0	7.29	6.50	12.02	17.52	4.54	24	0.60	350.40	350.25	351.91	351.89	355.51	355.39	21
816-817	142.17	0.050	2.440	0.75	0.04	1.76	5.0	7.07	6.56	11.56	41.34	8.06	24	3.34	355.25	350.50	356.45	351.28	360.34	355.51	22

Notes: IDF File = The Point IDF, Return Period = 10-yrs.

Project File: Storm System 800-Pipes.sws

# Storm Sewer Tabulation

Project Name: Storm System 800  
07-22-2021

Stormwater Studio 2021 v 3.0.0.25

Line ID	Length (ft)	Drng Area		Rational	C x A		Tc		Intensity (in/hr)	Total Q (cfs)	Capacity (cfs)	Velocity (ft/s)	Line		Invert Elev		HGL Elev		Surface Elev		Line No
		Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	
817-818	46.86	0.200	2.390	0.75	0.15	1.73	5.0	6.98	6.59	11.36	29.55	4.94	24	1.71	355.35	357.34	357.01	361.82	360.34	23	
818-820	132.27	0.180	1.960	0.75	0.14	1.42	5.0	6.58	6.70	9.49	17.59	5.50	24	0.60	357.05	358.15	357.31	363.30	361.82	24	
820-822	123.03	0.230	1.680	0.75	0.17	1.19	5.0	6.20	6.81	8.12	17.66	5.24	24	0.61	357.90	358.91	358.12	364.69	363.30	25	
822-823	146.58	0.220	0.430	0.75	0.17	0.32	5.0	5.12	7.15	2.31	6.31	4.25	15	0.96	361.85	362.46	360.98	366.33	364.69	26	
823-824	25.53	0.210	0.210	0.75	0.16	0.16	5.0	5.00	7.19	1.13	5.72	1.52	15	0.78	362.15	362.80	362.80	366.42	366.33	27	
822-825	25.11	0.220	1.020	0.75	0.17	0.70	5.0	6.12	6.83	4.77	8.12	2.90	18	0.60	358.25	359.51	359.49	364.75	364.69	28	
825-826	24.09	0.090	0.800	0.90	0.08	0.53	5.0	6.03	6.86	3.65	8.29	2.30	18	0.62	358.50	359.70	359.69	364.99	364.75	29	
826-827	58.53	0.080	0.060	0.90	0.07	0.07	5.0	5.00	7.19	0.52	4.99	2.54	15	0.60	360.55	360.84	360.47	364.82	364.99	30	
846-847	24.50	0.190	0.290	0.75	0.14	0.21	5.0	5.57	7.00	1.50	7.15	3.70	15	1.22	356.60	357.09	356.73	360.89	360.89	31	
847-848	53.29	0.020	0.100	0.60	0.01	0.07	5.0	5.42	7.05	0.51	8.79	4.09	12	6.10	360.15	360.45	357.07	362.65	360.89	32	
848-849	65.31	0.080	0.060	0.75	0.06	0.06	5.0	5.00	7.19	0.43	2.79	2.50	12	0.62	360.65	360.93	360.51	363.23	362.65	33	
826-828	75.13	0.210	0.630	0.65	0.14	0.38	5.0	5.72	6.95	2.64	5.00	2.68	15	0.60	359.05	359.86	359.77	361.92	364.99	34	
828-829	108.67	0.240	0.420	0.60	0.14	0.24	5.0	5.40	7.06	1.71	9.09	2.59	15	1.98	361.30	361.83	360.12	364.15	361.92	35	
829-830	102.73	0.180	0.180	0.55	0.10	0.10	5.0	5.00	7.19	0.71	8.78	1.87	15	1.85	363.30	363.64	362.06	366.15	364.15	36	
820-821	24.50	0.120	0.120	0.75	0.09	0.09	5.0	5.00	7.19	0.65	5.05	2.67	15	0.61	359.05	359.37	359.21	363.30	363.30	37	
818-819	24.50	0.210	0.210	0.75	0.16	0.16	5.0	5.00	7.19	1.13	5.00	1.97	15	0.60	357.55	357.40	358.08	361.82	361.82	38	
850-851	24.49	0.060	0.220	0.65	0.04	0.15	5.0	5.49	7.03	1.06	5.05	1.94	15	0.61	356.50	357.01	357.01	365.80	365.80	39	
851-852	94.42	0.160	0.160	0.70	0.11	0.11	5.0	5.00	7.19	0.80	5.55	2.95	15	0.74	358.50	358.86	358.13	361.39	365.80	40	
813-814	74.08	0.720	0.720	0.65	0.47	0.47	5.0	5.00	7.19	3.36	7.33	5.01	15	1.29	353.05	353.78	352.72	356.00	355.73	41	
843-844	24.50	0.150	0.240	0.75	0.11	0.18	5.0	5.54	7.01	1.26	6.52	1.10	15	1.02	350.15	351.18	351.17	355.51	355.51	42	
844-845	89.33	0.090	0.090	0.75	0.07	0.07	5.0	5.00	7.19	0.49	5.49	1.06	15	0.72	350.90	351.26	351.22	353.62	355.51	43	
801-802	94.86	0.090	1.190	0.85	0.08	0.80	5.0	5.65	6.98	5.60	8.14	4.97	18	0.60	346.57	347.48	346.91	351.26	350.83	44	

Notes: IDF File = The Point IDF, Return Period = 10-yrs.

Project File: Storm System 800-Pipes.sws

# Storm Sewer Tabulation

Project Name: Storm System 800  
07-22-2021

Stormwater Studio 2021 v 3.0.0.25

Line ID	Length (ft)	Drng Area		Rational	C x A		Tc		Intensity (in/hr)	Total Q (cfs)	Capacity (cfs)	Velocity (ft/s)	Line		Invert Elev		HGL Elev		Surface Elev		Line No
		Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	
802-804	132.33	0.240	0.670	0.70	0.17	0.45	5.0	5.14	7.14	3.19	4.99	4.31	15	0.60	347.80	347.01	348.53	347.74	353.08	351.26	45
804-805	32.50	0.430	0.430	0.65	0.28	0.28	5.0	5.00	7.19	2.01	4.94	3.73	15	0.58	348.83	348.64	349.40	349.20	353.08	353.08	46
840-855	47.74	0.360	2.420	0.70	0.25	1.56	5.0	6.06	6.85	10.67	34.94	2.40	30	0.73	344.60	344.25	346.59	346.58	350.66	350.96	47
855-856	136.81	0.080	0.490	0.85	0.07	0.33	5.0	5.15	7.14	2.39	6.05	2.95	15	0.88	346.50	345.30	347.12	346.67	352.36	350.66	48
856-857	26.57	0.270	0.270	0.78	0.21	0.21	5.0	5.00	7.19	1.51	5.60	3.51	15	0.75	348.25	348.05	348.74	348.51	352.54	352.36	49
831-832	32.50	0.100	0.100	0.85	0.09	0.09	5.0	5.00	7.19	0.61	5.07	2.62	15	0.62	348.10	347.90	348.42	348.20	351.34	351.34	50
802-803	32.49	0.430	0.430	0.65	0.28	0.28	5.0	5.00	7.19	2.01	5.00	1.84	15	0.60	347.01	346.82	347.97	347.96	351.26	351.26	51
808-809	17.20	0.030	0.030	0.65	0.02	0.02	5.0	5.00	7.19	0.14	5.00	0.24	15	0.60	346.70	346.60	347.25	347.25	350.95	351.32	52
810-811	31.63	0.250	0.250	0.45	0.11	0.11	5.0	5.00	7.19	0.81	5.13	2.87	15	0.63	347.75	347.55	348.11	347.89	351.00	353.94	53
833-834	32.50	0.030	0.230	0.85	0.03	0.20	5.0	5.70	6.96	1.36	5.07	3.33	15	0.62	346.00	345.80	346.47	346.25	352.86	352.86	54
834-835	49.26	0.060	0.200	0.85	0.05	0.17	5.0	5.45	7.04	1.20	5.04	2.75	15	0.61	346.40	346.10	346.84	346.64	353.35	352.86	55
835-836	82.70	0.140	0.140	0.85	0.12	0.12	5.0	5.00	7.19	0.86	5.02	2.93	15	0.60	347.00	346.50	347.37	346.85	351.23	353.35	56
855-859	39.41	0.210	1.570	0.77	0.16	0.97	5.0	5.93	6.89	6.69	18.02	2.33	24	0.63	345.05	344.80	346.66	346.65	350.76	350.66	57
859-860	30.39	0.190	1.360	0.85	0.16	0.81	5.0	5.83	6.92	5.60	18.35	2.08	24	0.66	345.35	345.15	346.86	346.85	350.00	350.76	58
860-861	73.05	0.420	1.170	0.50	0.21	0.65	5.0	5.57	7.00	4.53	8.24	2.89	18	0.62	345.90	345.45	347.02	346.93	349.99	350.00	59
861-862	118.17	0.230	0.230	0.55	0.13	0.13	5.0	5.00	7.19	0.91	7.97	3.51	15	1.52	348.55	346.75	348.93	347.04	351.84	349.99	60
856-858	22.76	0.140	0.140	0.40	0.06	0.06	5.0	5.00	7.19	0.40	5.18	0.47	15	0.64	346.75	346.60	347.51	347.51	350.00	352.36	61
861-863	66.99	0.270	0.520	0.55	0.15	0.31	5.0	5.29	7.09	2.21	5.00	2.13	15	0.60	346.40	346.00	347.26	347.21	349.80	349.99	62
863-864	105.82	0.250	0.250	0.65	0.16	0.16	5.0	5.00	7.19	1.17	11.74	2.17	15	3.30	350.00	346.50	350.43	347.39	353.20	349.80	63

Notes: IDF File = The Point IDF, Return Period = 10-yrs.

Project File: Storm System 800-Pipes.sws

# Energy Grade Line Calculations

Project Name: Storm System 800  
07-22-2021

Stormwater Studio 2021 v 3.0.0.25

Line No	Line Size (in)	Q (cfs)	Downstream						Length (ft)	Upstream							Pipe		Junction		
			Invert Elev (ft)	Depth (ft)	Area (sqft)	HGL Elev (ft)	Vel (ft/s)	Vel Head (ft)		EGL Elev (ft)	Invert Elev (ft)	Depth (ft)	Area (sqft)	HGL Elev (ft)	Vel (ft/s)	Vel Head (ft)	EGL Elev (ft)	n Value	Energy Loss (ft)	HGLa Elev (ft)	EGLa Elev (ft)
1	60	47.36	340.00	4.51	18.65	344.51	2.54	0.10	344.61	34.27	340.30	4.21	17.63	344.51	2.69	0.11	344.62	0.013	344.79	344.89	0.26
2	60	41.67	340.40	4.40	18.31	344.81	2.28	0.08	344.89	32.50	340.60	4.21	17.63	344.81	2.36	0.09	344.89	0.013	345.13	345.21	0.31
3	54	21.23	340.70	4.48	15.90	345.18	1.34	0.03	345.21	109.69	341.35	3.84	14.46	345.19	1.47	0.03	345.22	0.013	345.25	345.27	0.05
4	42	19.81	341.70	3.50	9.62	345.21	2.06	0.07	345.27	150.51	342.55	2.69	7.93	345.24	2.50	0.10	345.34	0.013	345.36	345.42	0.09
5	36	18.10	342.65	2.71	6.71	345.36	2.70	0.11	345.47	21.63	342.80	2.56	6.43	345.36	2.81	0.12	345.49	0.013	345.50	345.61	0.12
6	36	18.00	342.90	2.60	6.50	345.50	2.77	0.12	345.62	58.05	343.25	2.25	5.70	345.51	3.16	0.16	345.66	0.013	345.66	345.78	0.11
7	30	17.98	343.35	2.30	4.73	345.66	3.80	0.22	345.88	97.80	343.90	1.84	3.88	345.75	4.64	0.33	346.08	0.013	346.15	346.38	0.30
8	30	17.82	344.00	2.15	4.49	346.15	3.97	0.24	346.40	26.56	344.15	2.03	4.26	346.18	4.18	0.27	346.45	0.013	346.41	346.66	0.21
9	18	6.54	346.20	1.01 <sup>3</sup>	1.27	347.21	5.16	0.41	347.63	24.53	346.35	1.01	1.27	347.36	5.16	0.41	347.78	0.013	347.49	347.91	0.13
10	18	5.48	346.45	0.64 <sup>‡</sup>	0.72	347.09	7.60	0.90	347.90	150.16	349.80	0.89 <sup>2</sup>	1.10	350.69	4.99	0.39	351.08	0.013	351.01	351.19	0.11
11	15	3.62	351.26	0.79 <sup>3</sup>	0.82	352.05	4.44	0.31	352.36	116.61	351.96	0.79	0.82	352.75	4.44	0.31	353.06	0.013	352.92	353.22	0.17
12	15	1.58	355.50	0.48 <sup>‡</sup>	0.44	355.98	3.63	0.20	356.19	120.60	356.25	0.50 <sup>2</sup>	0.46	356.75	3.42	0.18	356.94	0.013	356.87	357.05	0.12
13	15	0.34	361.55	0.22 <sup>‡</sup>	0.15	361.77	2.36	0.09	361.86	37.74	361.78	0.23 <sup>2</sup>	0.16	362.01	2.15	0.07	362.09	0.013	362.05	362.13	0.04
14	15	0.16	362.28	0.16 <sup>‡</sup>	0.09	362.44	1.78	0.05	362.49	46.50	362.56	0.16 <sup>2</sup>	0.09	362.72	1.75	0.05	362.77	0.013	362.73	362.78	0.01
15	30	18.78	344.06	1.42 <sup>‡</sup>	2.89	345.48	6.51	0.66	346.14	60.77	344.43	1.45 <sup>2</sup>	2.95	345.88	6.37	0.63	346.51	0.013	346.20	346.83	0.32
16	30	18.45	344.53	2.00	4.20	346.53	4.39	0.30	346.83	24.50	344.67	1.87	3.94	346.54	4.69	0.34	346.88	0.013	346.95	347.25	0.37
17	30	18.23	344.77	2.23	4.63	347.00	3.94	0.24	347.24	89.38	345.31	1.76	3.68	347.07	4.95	0.38	347.45	0.013	347.60	347.84	0.39
18	30	17.37	348.44	1.37 <sup>‡</sup>	2.75	349.81	6.32	0.62	350.43	49.34	348.74	1.39 <sup>2</sup>	2.81	350.13	6.18	0.59	350.72	0.013	350.48	351.08	0.36
19	30	17.09	349.23	1.37 <sup>‡</sup>	2.75	350.60	6.22	0.60	351.20	27.41	349.40	1.39	2.80	350.79	6.11	0.58	351.37	0.013	351.06	351.65	0.28
20	24	13.05	349.90	1.28 <sup>‡</sup>	2.11	351.18	6.17	0.59	351.77	43.53	350.16	1.29	2.14	351.45	6.10	0.58	352.03	0.013	351.61	352.19	0.16
21	24	12.02	350.25	1.64	2.75	351.89	4.37	0.30	352.18	24.99	350.40	1.51	2.55	351.91	4.71	0.34	352.26	0.013	352.11	352.41	0.15
22	24	11.56	350.50	0.78 <sup>‡</sup>	1.13	351.28	10.26	1.64	352.40	142.17	355.25	1.20 <sup>2</sup>	1.98	356.45	5.85	0.53	356.99	0.013	357.00	357.28	0.29

Notes: Return Period = 10-yrs. <sup>2</sup> Critical depth. <sup>3</sup> Normal depth. ‡ Supercritical.

# Energy Grade Line Calculations

Project Name: Storm System 800

Stormwater Studio 2021 v 3.0.0.25

07-22-2021

Line No	Line Size (in)	Q (cfs)	Downstream						Length (ft)	Upstream						Pipe		Junction	
			Invert Elev (ft)	Depth (ft)	Area (sqft)	HGL Elev (ft)	Vel (ft/s)	Vel Head (ft)		EGL Elev (ft)	Invert Elev (ft)	Depth (ft)	Area (sqft)	HGL Elev (ft)	Vel (ft/s)	Vel Head (ft)	EGL Elev (ft)	n Value	Energy Loss (ft)
23	24	11.36	355.35	1.66	2.79	357.01	4.07	0.26	357.27	46.86	357.34	5.81	0.52	357.87	0.013	0.598	357.87	358.13	0.26
24	24	9.49	356.25	1.06 <sup>‡</sup>	1.69	357.31	5.62	0.49	358.13	132.27	358.15	5.38	0.45	358.60	0.013	0.471	358.60	358.76	0.16
25	24	8.12	357.15	0.97 <sup>‡</sup>	1.51	358.12	5.38	0.45	358.76	123.03	358.91	5.11	0.41	359.32	0.013	0.551	359.32	359.61	0.29
26	15	2.31	360.45	0.53 <sup>‡</sup>	0.50	360.98	4.61	0.33	361.29	146.58	362.46	3.89	0.24	362.69	0.013	1.400	362.69	362.83	0.13
27	15	1.13	361.95	0.85	0.89	362.80	1.27	0.03	362.83	25.53	362.80	1.76	0.05	362.85	0.013	0.019	362.85	362.86	0.01
28	18	4.77	358.10	1.39	1.71	359.49	2.79	0.12	359.61	25.11	359.51	3.00	0.14	359.65	0.013	0.047	359.65	359.76	0.11
29	18	3.65	358.35	1.34	1.66	359.69	2.20	0.07	359.76	24.09	359.70	2.41	0.09	359.79	0.013	0.027	359.79	359.84	0.05
30	15	0.52	360.20	0.27 <sup>‡</sup>	0.19	360.47	2.67	0.11	360.58	58.53	360.84	2.42	0.09	360.93	0.013	0.350	360.93	360.95	0.02
31	15	1.50	356.30	0.43 <sup>‡</sup>	0.37	356.73	4.04	0.25	356.97	24.50	357.09	3.36	0.18	357.27	0.013	0.300	357.27	357.36	0.09
32	12	0.51	356.90	0.17 <sup>‡</sup>	0.09	357.07	5.64	0.49	357.35	53.29	360.45	2.54	0.10	360.55	0.013	3.198	360.55	360.60	0.05
33	12	0.43	360.25	0.26 <sup>‡</sup>	0.17	360.51	2.60	0.10	360.63	65.31	360.93	2.41	0.09	361.02	0.013	0.394	361.02	361.04	0.02
34	15	2.64	358.60	1.17	1.19	359.77	2.21	0.08	359.85	75.13	359.86	3.15	0.15	360.01	0.013	0.166	360.01	360.17	0.16
35	15	1.71	359.15	0.97	1.02	360.12	1.67	0.04	360.17	108.67	361.83	3.51	0.19	362.02	0.013	1.853	362.02	362.08	0.06
36	15	0.71	361.40	0.66	0.66	362.06	1.08	0.02	362.08	102.73	363.64	2.66	0.11	363.75	0.013	1.670	363.75	363.77	0.02
37	15	0.65	358.90	0.31 <sup>‡</sup>	0.23	359.21	2.78	0.12	359.33	24.50	359.37	2.56	0.10	359.48	0.013	0.150	359.48	359.50	0.02
38	15	1.13	357.40	0.68	0.68	358.08	1.66	0.04	358.13	24.50	358.08	2.27	0.08	358.16	0.013	0.037	358.16	358.18	0.02
39	15	1.06	356.35	0.66	0.66	357.01	1.61	0.04	357.05	24.49	357.01	2.26	0.08	357.09	0.013	0.038	357.09	357.14	0.05
40	15	0.80	357.80	0.33 <sup>‡</sup>	0.26	358.13	3.14	0.15	358.28	94.42	358.86	2.76	0.12	358.98	0.013	0.697	358.98	359.00	0.02
41	15	3.36	352.10	0.62 <sup>‡</sup>	0.61	352.72	5.52	0.47	353.14	74.08	353.78	4.49	0.31	354.10	0.013	0.954	354.10	354.16	0.06
42	15	1.26	349.90	1.25	1.23	351.17	1.03	0.02	351.19	24.50	351.18	1.17	0.02	351.20	0.013	0.009	351.20	351.23	0.03
43	15	0.49	350.25	0.97	1.02	351.22	0.48	0.00	351.23	89.33	351.26	1.64	0.04	351.30	0.013	0.079	351.30	351.31	0.01
44	18	5.60	346.00	0.91 <sup>‡</sup>	1.13	346.91	4.96	0.38	347.30	94.86	347.48	4.97	0.38	347.87	0.013	0.570	347.87	348.00	0.13

Notes: Return Period = 10-yrs. <sup>‡</sup> Critical depth. <sup>‡</sup> Normal depth. <sup>‡</sup> Supercritical.

Project File: Storm System 800-Pipes.sws

# Energy Grade Line Calculations

Project Name: Storm System 800  
07-22-2021

Stormwater Studio 2021 v 3.0.0.25

Line No	Line Size (in)	Q (cfs)	Downstream						Length (ft)	Upstream						Pipe		Junction				
			Invert Elev (ft)	Depth (ft)	Area (sqft)	HGL Elev (ft)	Vel (ft/s)	Vel Head (ft)		EGL Elev (ft)	Invert Elev (ft)	Depth (ft)	Area (sqft)	HGL Elev (ft)	Vel (ft/s)	Vel Head (ft)	EGL Elev (ft)	n Value	Energy Loss (ft)	HGLa Elev (ft)	EGLa Elev (ft)	Energy Loss (ft)
45	15	3.19	347.01	0.73 <sup>3</sup>	0.74	347.74	4.31	0.29	348.03	132.33	347.80	0.73	0.74	348.53	4.31	0.29	348.82	0.013	0.790	348.72	349.01	0.19
46	15	2.01	348.64	0.56 <sup>‡</sup>	0.53	349.20	3.78	0.22	349.42	32.50	348.83	0.57	0.55	349.40	3.68	0.21	349.61	0.013	0.190	349.44	349.65	0.04
47	30	10.67	344.25	2.32	4.76	346.58	2.24	0.08	346.66	47.74	344.60	1.98	4.18	346.59	2.55	0.10	346.69	0.013	0.030	346.65	346.73	0.04
48	15	2.39	345.30	1.25	1.23	346.67	1.95	0.06	346.73	136.81	346.50	0.62 <sup>2</sup>	0.61	347.12	3.94	0.24	347.36	0.013	0.631	347.45	347.51	0.15
49	15	1.51	348.05	0.46 <sup>‡</sup>	0.41	348.51	3.65	0.21	348.72	26.57	348.25	0.49 <sup>2</sup>	0.45	348.74	3.37	0.18	348.92	0.013	0.200	348.78	348.95	0.03
50	15	0.61	347.90	0.30 <sup>‡</sup>	0.22	348.20	2.72	0.12	348.31	32.50	348.10	0.32	0.24	348.42	2.51	0.10	348.51	0.013	0.200	348.43	348.53	0.02
51	15	2.01	346.82	1.14	1.18	347.96	1.71	0.05	348.00	32.49	347.01	0.96	1.02	347.97	1.98	0.06	348.03	0.013	0.033	348.00	348.05	0.01
52	15	0.14	346.60	0.65	0.64	347.25	0.22	0.00	347.25	17.20	346.70	0.55	0.52	347.25	0.27	0.00	347.25	0.013	0.001	347.25	347.25	0.00
53	15	0.81	347.55	0.34 <sup>‡</sup>	0.27	347.89	2.97	0.14	348.03	31.63	347.75	0.36 <sup>2</sup>	0.29	348.11	2.77	0.12	348.23	0.013	0.200	348.13	348.25	0.02
54	15	1.36	345.80	0.45 <sup>‡</sup>	0.40	346.25	3.43	0.18	346.43	32.50	346.00	0.47	0.42	346.47	3.23	0.16	346.63	0.013	0.200	346.57	346.73	0.10
55	15	1.20	346.10	0.54	0.50	346.64	2.39	0.09	346.72	49.26	346.40	0.44 <sup>2</sup>	0.38	346.84	3.12	0.15	346.99	0.013	0.266	347.01	347.10	0.11
56	15	0.86	346.50	0.35 <sup>3</sup>	0.28	346.85	3.04	0.14	347.10	82.70	347.00	0.37 <sup>2</sup>	0.30	347.37	2.81	0.12	347.49	0.013	0.398	347.48	347.52	0.02
57	24	6.69	344.80	1.85	3.04	346.65	2.20	0.08	346.73	39.41	345.05	1.61	2.72	346.66	2.46	0.09	346.76	0.013	0.031	346.84	346.91	0.15
58	24	5.60	345.15	1.70	2.85	346.85	1.97	0.06	346.91	30.39	345.35	1.51	2.54	346.86	2.20	0.08	346.93	0.013	0.022	346.93	346.99	0.06
59	18	4.53	345.45	1.48	1.76	346.93	2.57	0.10	347.03	73.05	345.90	1.12	1.41	347.02	3.22	0.16	347.18	0.013	0.145	347.16	347.26	0.09
60	15	0.91	346.75	0.29 <sup>‡</sup>	0.22	347.04	4.16	0.27	347.27	118.17	348.55	0.38 <sup>2</sup>	0.32	348.93	2.87	0.13	349.06	0.013	1.793	348.98	349.08	0.02
61	15	0.40	346.60	0.90	0.95	347.51	0.42	0.00	347.51	22.76	346.75	0.76	0.78	347.51	0.52	0.00	347.51	0.013	0.002	347.51	347.51	0.00
62	15	2.21	346.00	1.21	1.22	347.21	1.81	0.05	347.26	66.99	346.40	0.86	0.90	347.26	2.44	0.09	347.36	0.013	0.092	347.37	347.42	0.06
63	15	1.17	346.50	0.89	0.94	347.39	1.25	0.02	347.42	105.82	350.00	0.43 <sup>2</sup>	0.38	350.43	3.10	0.15	350.58	0.013	3.161	350.58	350.61	0.03

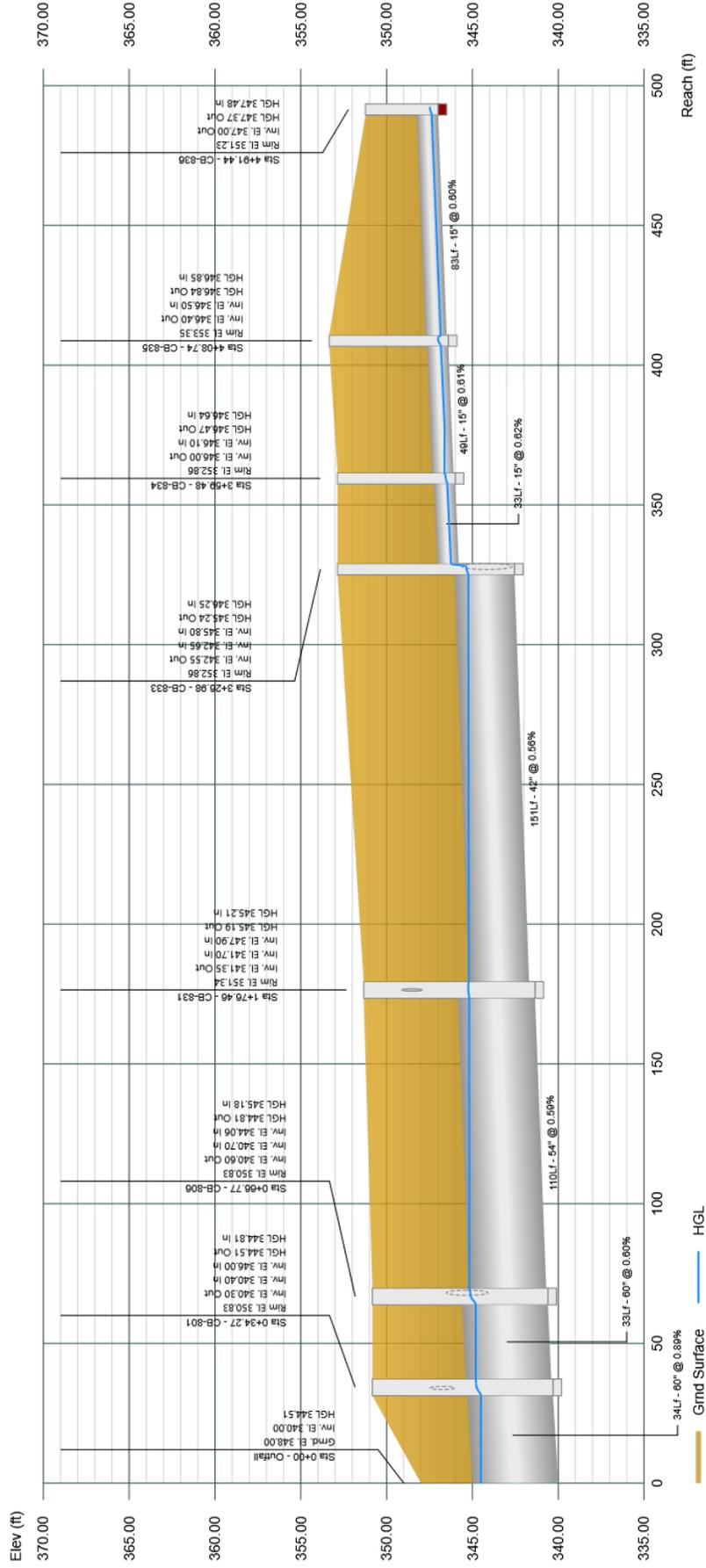
Notes: Return Period = 10-yrs. <sup>2</sup> Critical depth. <sup>3</sup> Normal depth. ‡ Supercritical.

# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 800

07-23-2021

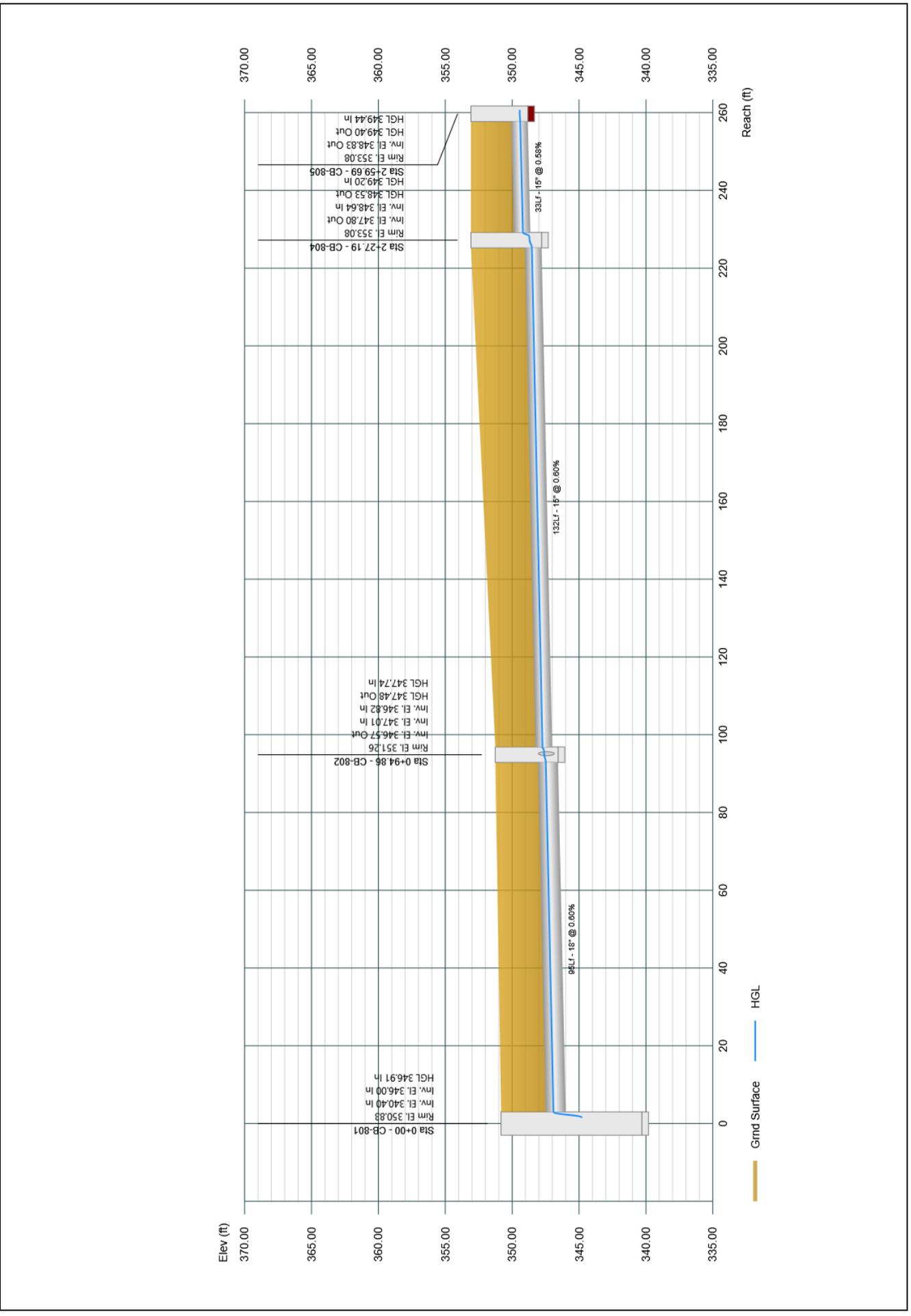


# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 800

07-23-2021

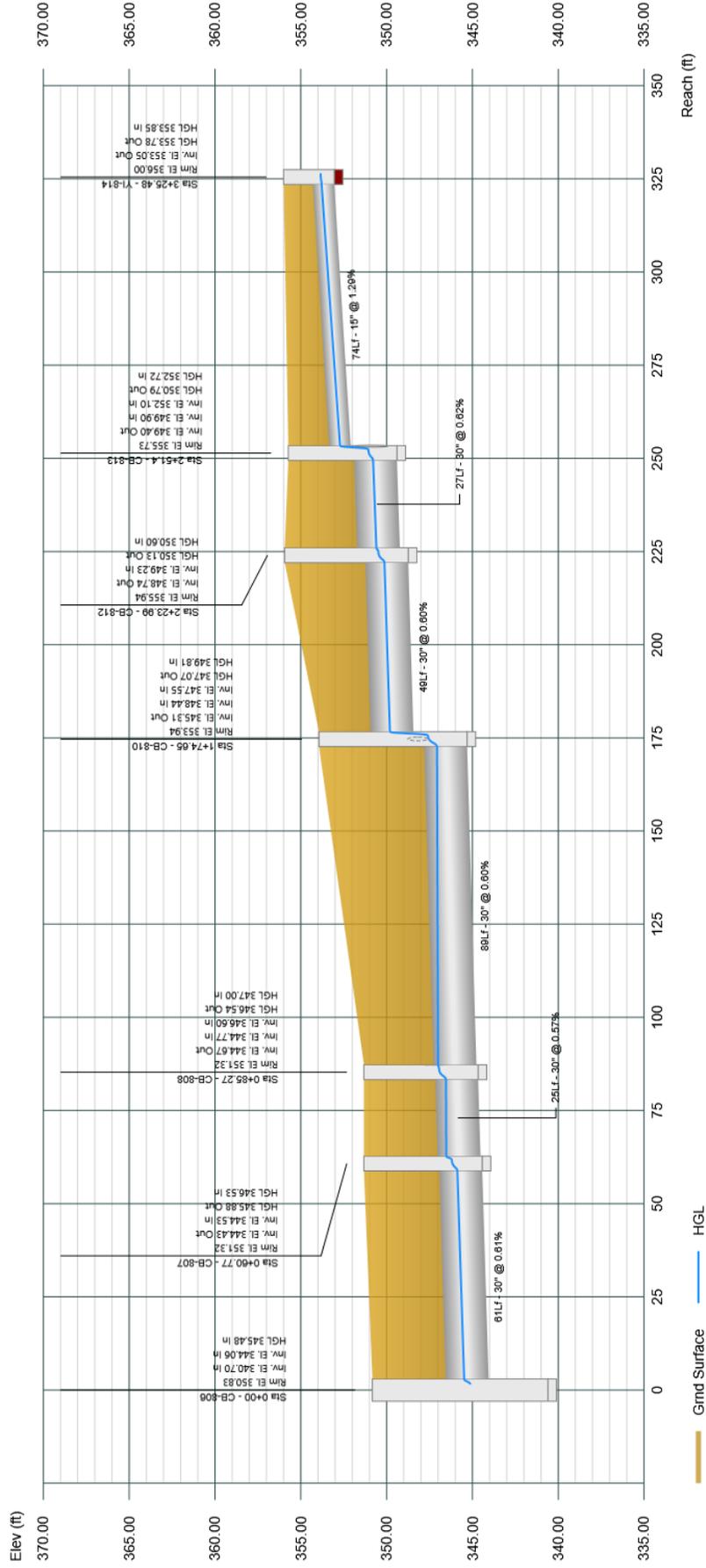


# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 800

07-23-2021

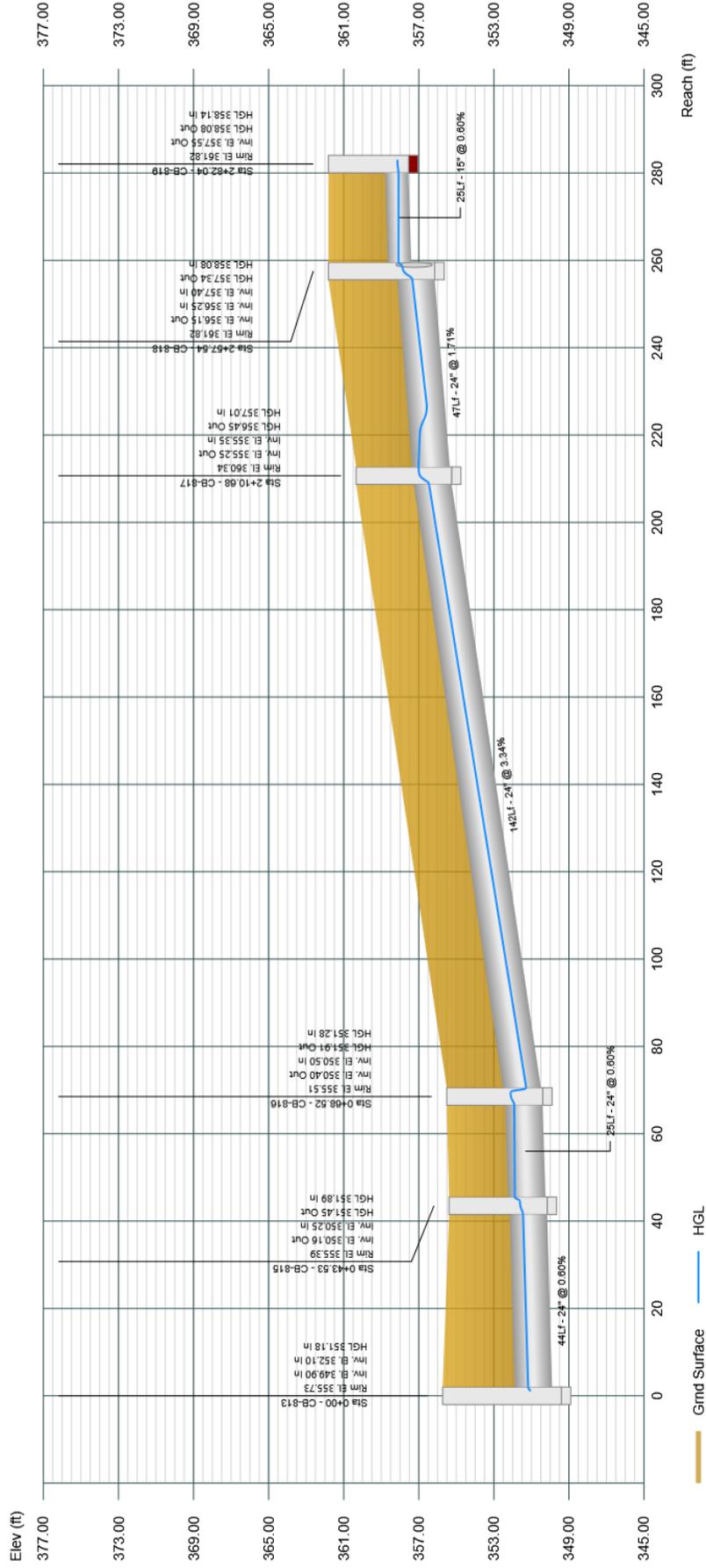


# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 800

07-23-2021

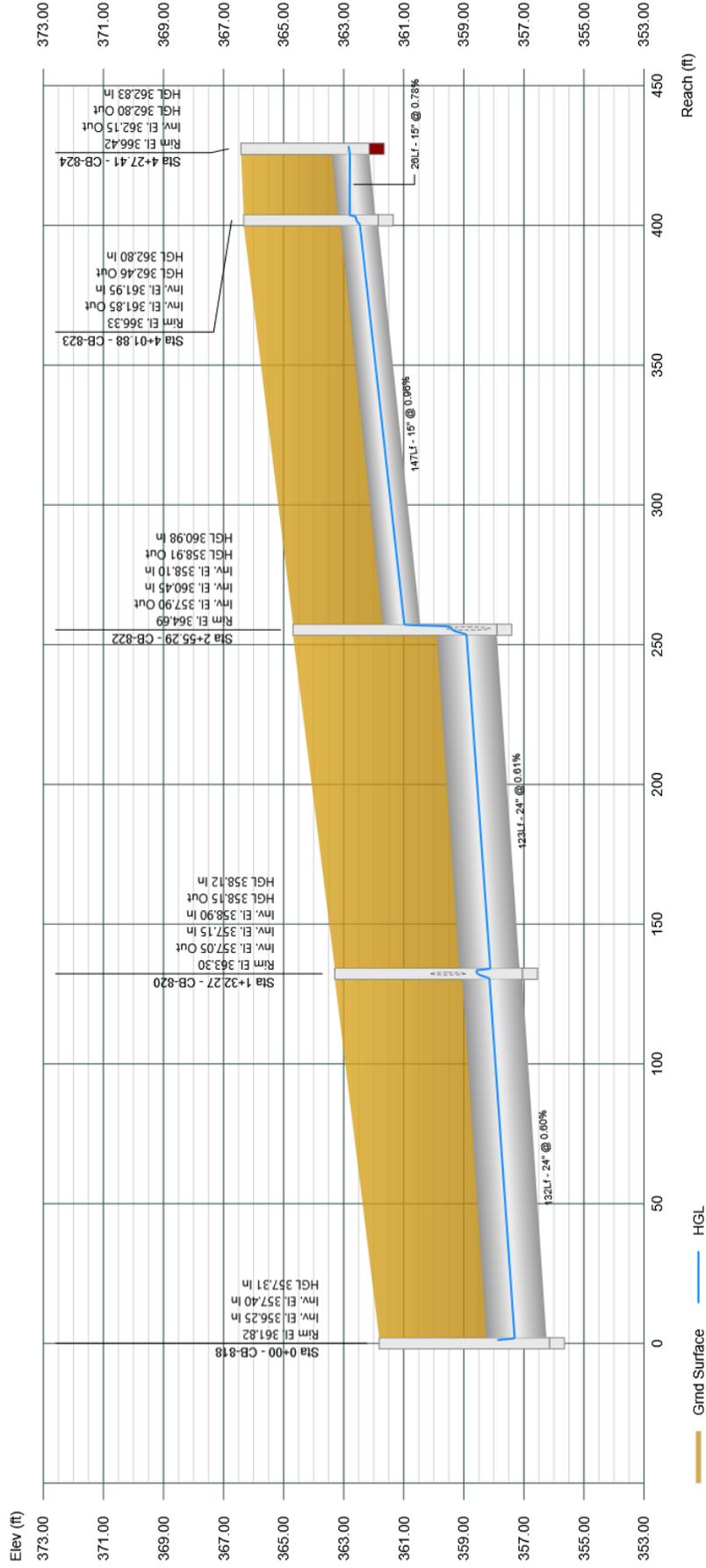


# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 800

07-23-2021

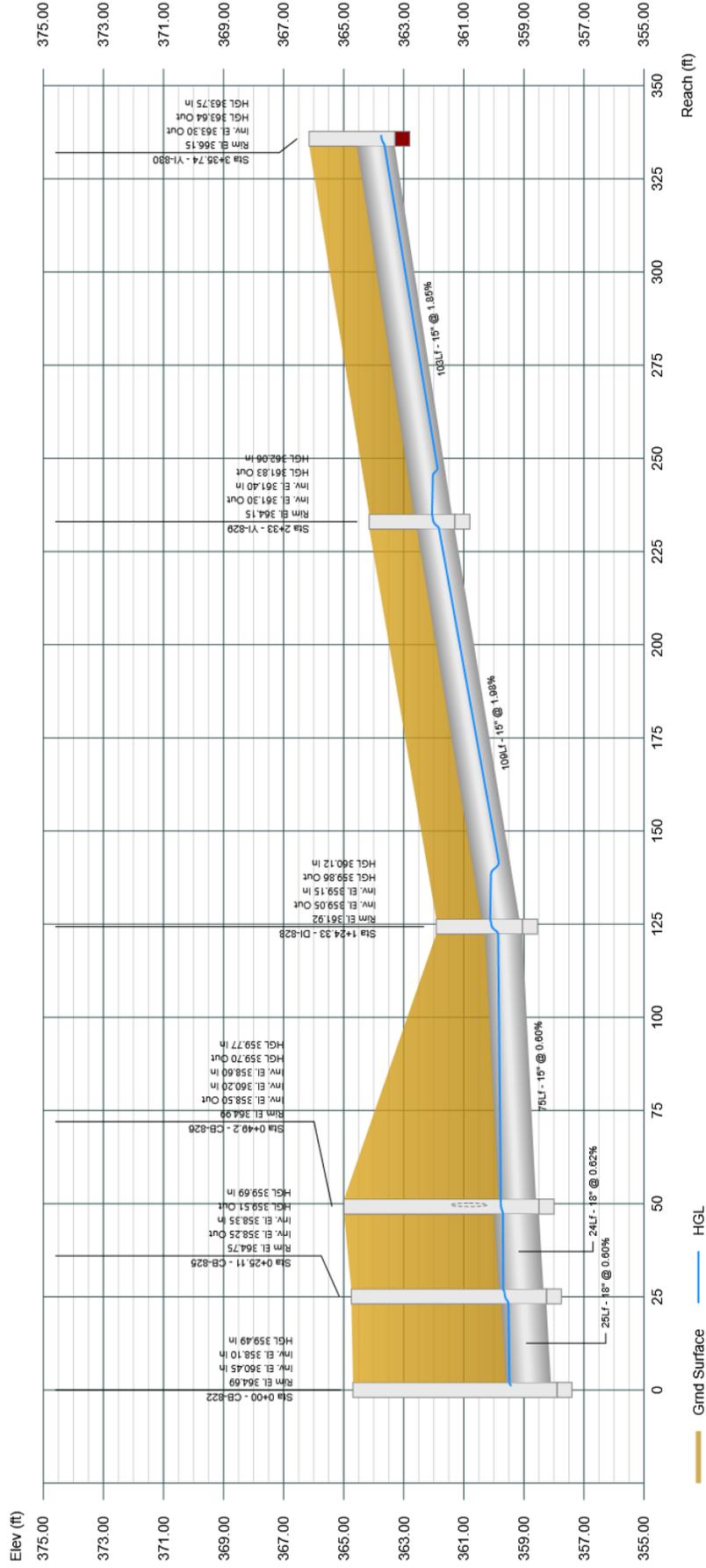


# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 800

07-23-2021

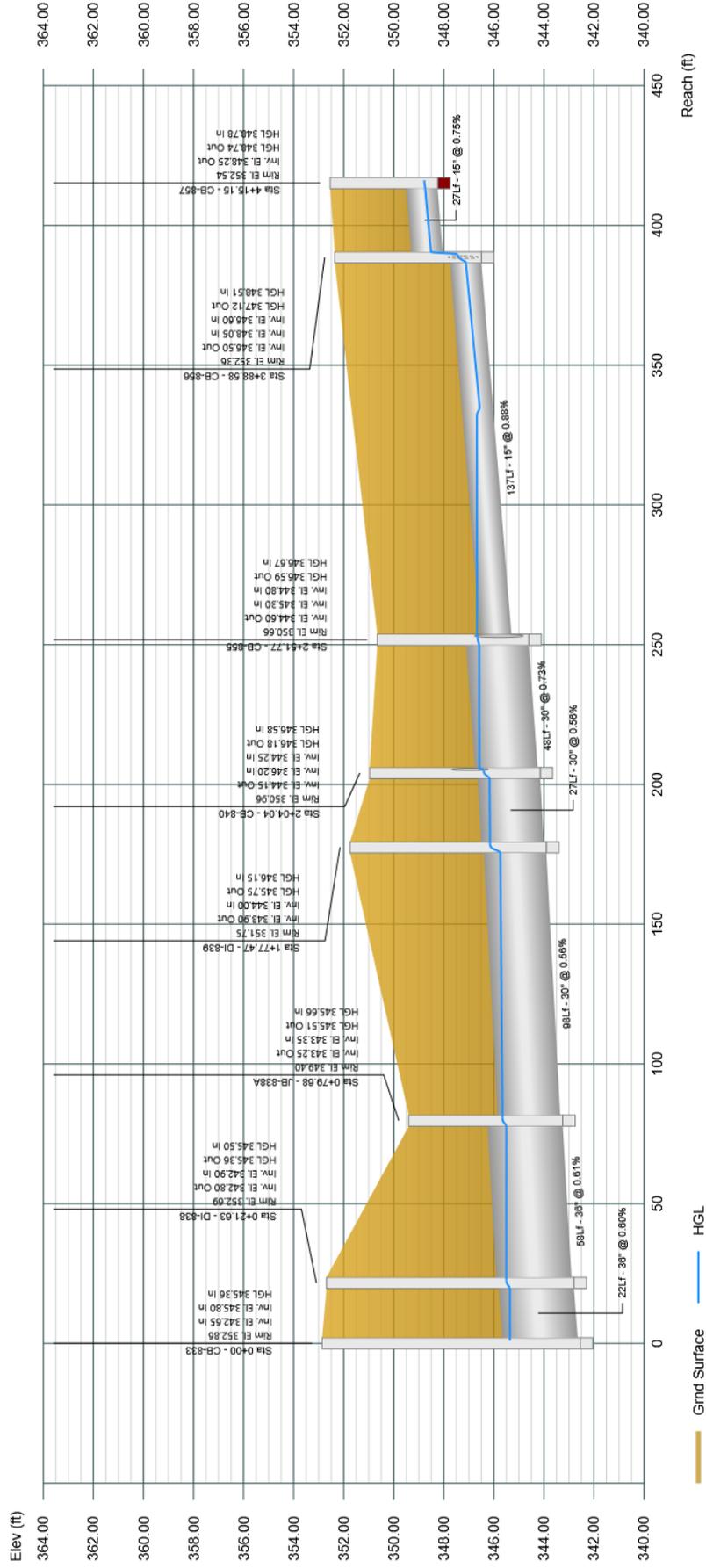


# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 800

07-23-2021

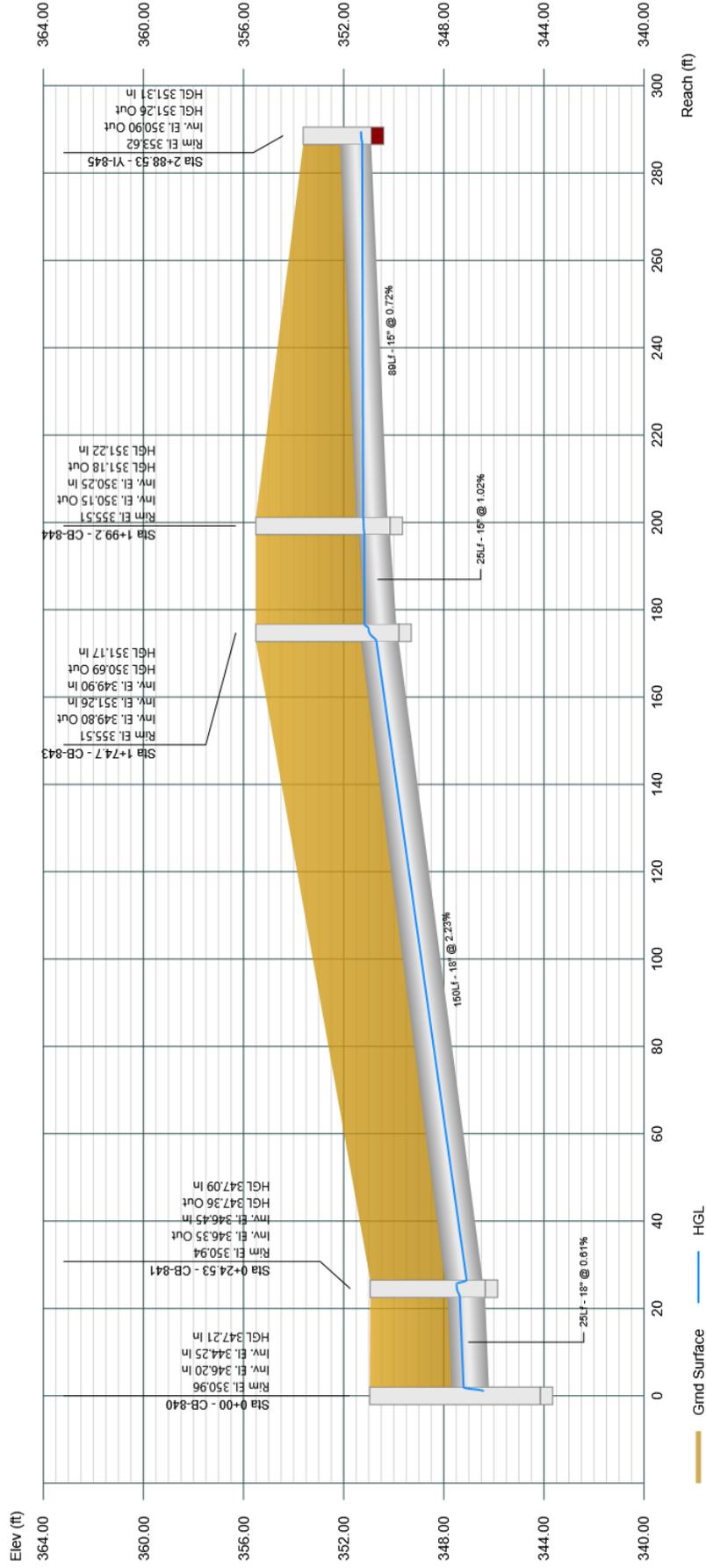


# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 800

07-23-2021

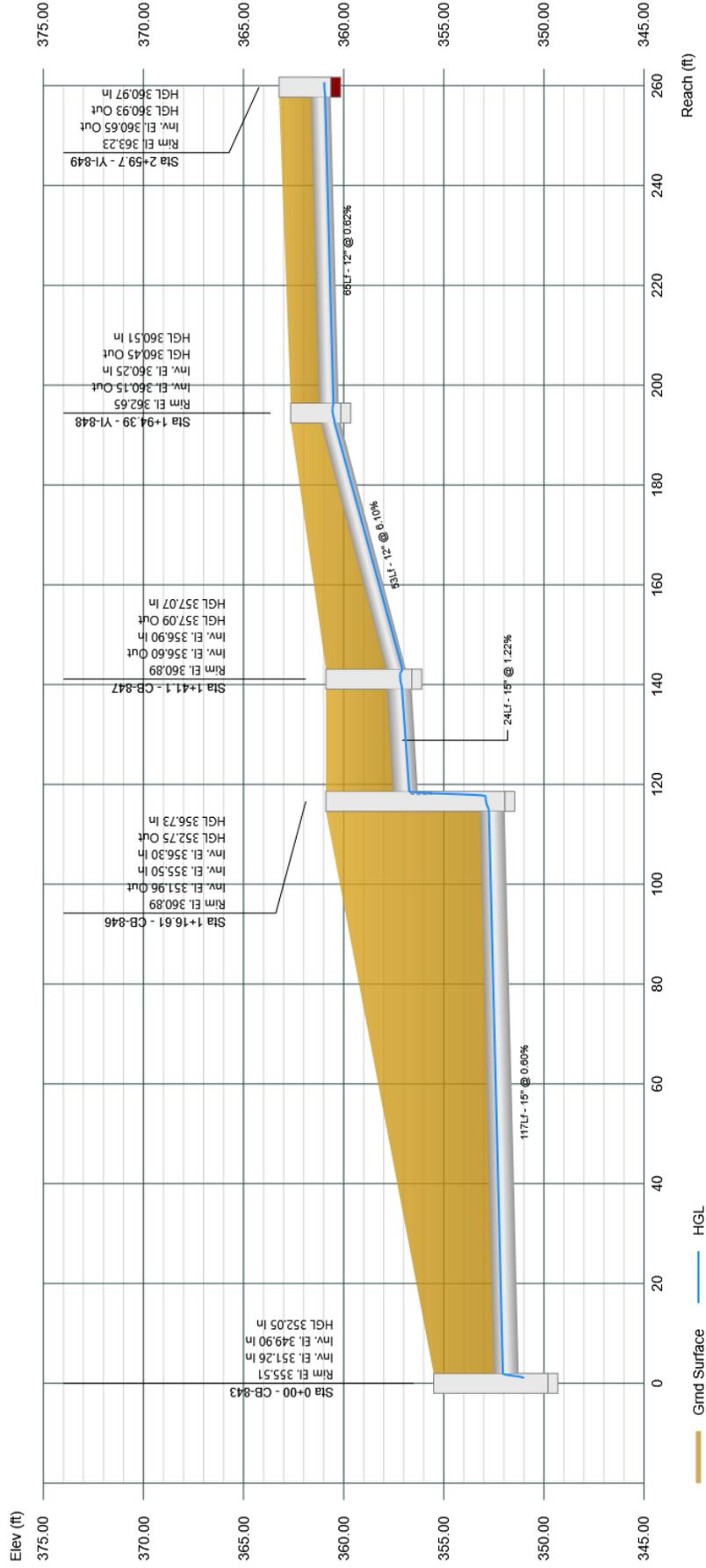


# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 800

07-23-2021

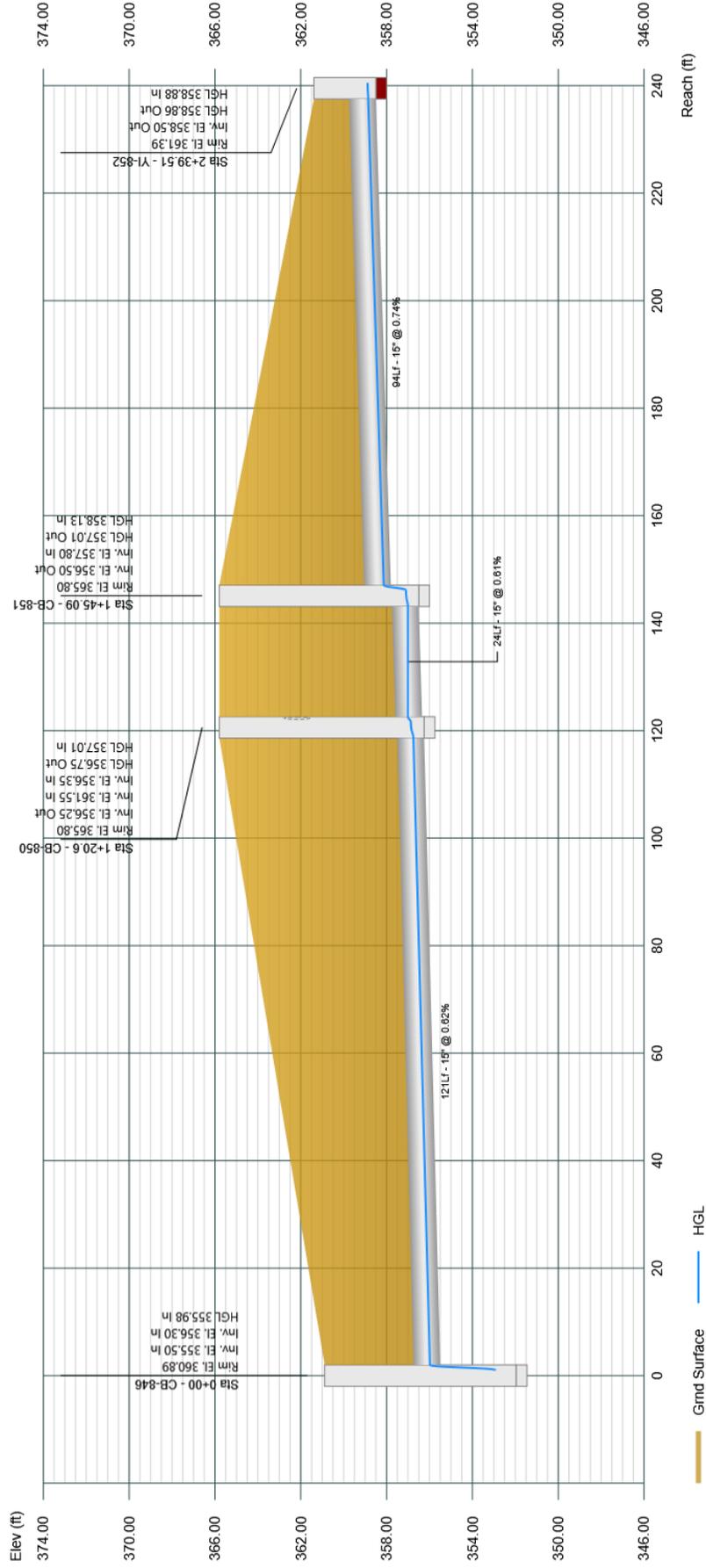


# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 800

07-23-2021

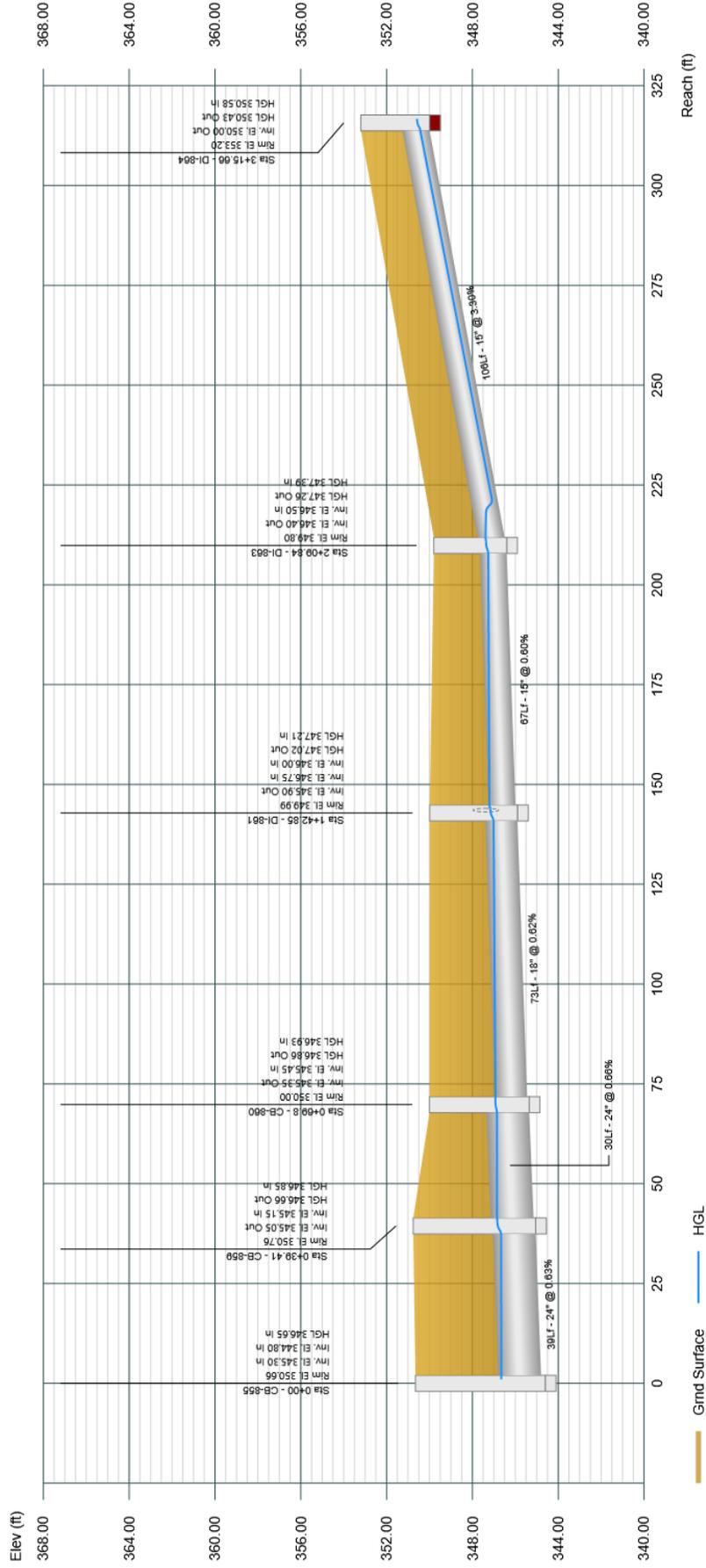


# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 800

07-23-2021



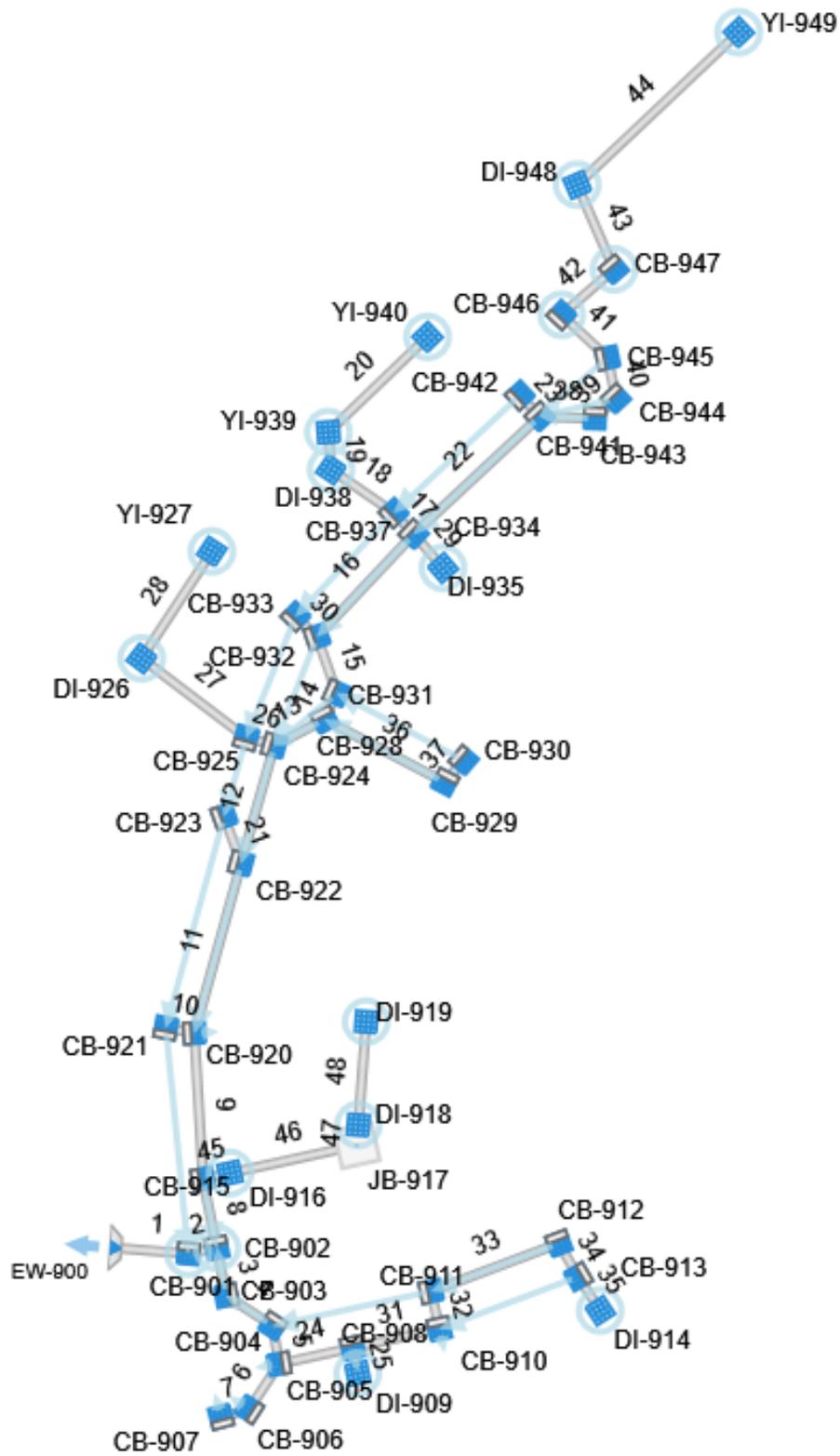
*SYSTEM 900 – REPORTS AND PROFILES*

# Plan View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 900

07-19-2021



# Storm Sewer Tabulation

Project Name: Storm System 900  
07-26-2021

Stormwater Studio 2021 v 3.0.0.25

Line ID	Length (ft)	Drng Area		Rational	C x A		Tc		Intensity (in/hr)	Total Q (cfs)	Capacity (cfs)	Velocity (ft/s)	Line		Invert Elev		HGL Elev		Surface Elev		Line No
		Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	
900-901	56.33	0.150	11.310	0.85	0.13	7.64	5.0	8.16	6.28	47.95	314.37	6.42	42	9.76	315.50	310.00	317.62	314.55	327.18	316.00	1
901-902	24.50	0.130	11.160	0.75	0.10	7.51	5.0	8.11	6.29	47.24	90.90	7.93	42	0.82	320.00	319.80	322.10	321.85	327.18	327.18	2
902-903	40.99	0.060	2.940	0.70	0.04	2.02	5.0	5.97	6.88	13.86	37.91	3.10	30	0.85	321.50	321.15	323.50	323.49	327.35	327.18	3
903-904	46.68	0.150	2.880	0.75	0.11	1.97	5.0	5.86	6.91	13.64	20.94	4.88	24	0.86	322.20	321.80	323.72	323.68	330.10	327.35	4
904-905	32.54	0.050	2.730	0.80	0.04	1.86	5.0	5.78	6.93	12.90	21.55	5.04	24	0.91	322.60	322.30	323.98	324.02	330.10	330.10	5
905-906	45.95	0.200	0.390	0.65	0.13	0.27	5.0	5.13	7.14	1.95	8.57	1.19	18	0.67	323.65	323.35	324.87	324.86	328.34	330.02	6
906-907	24.55	0.190	0.190	0.75	0.14	0.14	5.0	5.00	7.19	1.02	5.00	1.06	15	0.60	324.10	323.95	324.96	324.96	328.37	328.34	7
902-915	59.49	0.130	8.090	0.75	0.10	5.40	5.0	7.99	6.32	34.12	54.69	7.40	36	0.67	321.40	321.00	323.26	322.86	327.52	327.18	8
915-920	123.46	0.150	5.620	0.75	0.11	3.95	5.0	7.80	6.37	25.14	60.10	8.75	30	2.15	324.65	322.00	326.33	323.24	330.59	327.52	9
920-921	24.50	0.170	0.170	0.78	0.13	0.13	5.0	5.00	7.19	0.95	6.52	0.85	15	1.02	326.35	326.10	327.33	327.33	330.59	330.59	10
920-922	148.69	0.100	5.300	0.75	0.08	3.70	5.0	7.62	6.41	23.75	86.73	10.14	30	4.47	331.70	325.05	333.33	326.03	337.33	330.59	11
922-924	103.33	0.140	5.120	0.90	0.13	3.57	5.0	7.50	6.45	23.00	83.17	9.57	30	4.11	336.05	331.80	337.65	332.82	342.19	337.33	12
924-928	47.79	0.070	4.600	0.80	0.06	3.16	5.0	7.44	6.46	20.40	80.69	8.51	30	3.87	338.50	336.65	340.01	337.70	344.93	342.19	13
0.21	24.59	0.130	4.060	0.73	0.09	2.76	5.0	7.39	6.48	17.89	41.36	4.72	30	1.02	338.85	338.60	340.52	340.58	344.97	344.93	14
931-932	50.50	0.070	3.930	0.85	0.06	2.67	5.0	7.28	6.51	17.36	40.81	5.11	30	0.99	339.45	338.95	340.85	340.97	347.03	344.97	15
932-934	118.94	0.150	3.660	0.78	0.12	2.46	5.0	6.99	6.58	16.19	35.68	6.35	30	0.76	340.45	339.55	341.79	340.79	352.58	347.03	16
934-937	24.50	0.210	0.580	0.75	0.16	0.36	5.0	5.71	6.96	2.49	6.52	4.25	15	1.02	348.25	348.00	348.88	348.58	352.58	352.58	17
937-938	64.36	0.030	0.370	0.45	0.01	0.20	5.0	5.55	7.01	1.41	12.84	2.45	15	3.96	350.90	348.35	351.37	349.19	353.88	352.58	18
938-939	31.69	0.200	0.340	0.55	0.11	0.19	5.0	5.46	7.04	1.32	5.83	4.35	12	2.68	352.00	351.15	352.49	351.51	354.81	353.88	19
939-940	116.01	0.140	0.140	0.55	0.08	0.08	5.0	5.00	7.19	0.55	5.01	1.81	12	1.98	354.40	352.10	354.71	352.75	357.10	354.81	20
922-923	42.30	0.080	0.080	0.75	0.06	0.06	5.0	5.00	7.19	0.43	12.75	1.33	15	3.90	334.70	333.05	334.96	334.26	338.96	337.33	21
934-941	145.43	0.100	2.110	0.85	0.09	1.45	5.0	6.63	6.68	9.70	22.58	6.01	24	1.00	349.00	347.55	350.10	348.50	357.12	352.58	22

Notes: IDF File = The Point IDF, Return Period = 10-yrs. Project File: Storm System 900.sws

# Storm Sewer Tabulation

Project Name: Storm System 900  
07-26-2021

Stormwater Studio 2021 v 3.0.0.25

Line ID	Length (ft)	Drng Area		Rational	C x A		Tc		Intensity (in/hr)	Total Q (cfs)	Capacity (cfs)	Velocity (ft/s)	Line		Invert Elev		HGL Elev		Surface Elev		Line No
		Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	
941-942	24.50	0.470	0.470	0.75	0.35	0.35	5.0	5.00	7.19	2.53	5.05	4.04	15	0.61	352.85	352.70	353.49	353.33	357.12	357.12	23
905-908	63.51	0.050	2.290	0.85	0.04	1.55	5.0	5.70	6.96	10.78	49.17	8.01	24	4.73	328.00	325.00	329.16	325.73	333.06	330.02	24
908-909	22.07	0.690	0.690	0.65	0.45	0.45	5.0	5.00	7.19	3.22	21.30	6.99	15	10.88	331.20	328.80	331.92	329.20	334.49	333.06	25
924-925	24.50	0.170	0.380	0.75	0.13	0.29	5.0	5.70	6.96	1.98	5.83	1.96	15	0.82	337.85	337.65	338.73	338.73	342.19	342.19	26
925-926	110.66	0.090	0.210	0.75	0.07	0.16	5.0	5.36	7.07	1.11	10.28	2.11	15	2.53	340.75	337.95	341.18	338.85	344.02	342.19	27
926-927	108.01	0.120	0.120	0.75	0.09	0.09	5.0	5.00	7.19	0.65	6.08	3.77	12	2.91	344.15	341.00	344.49	341.23	347.12	344.02	28
934-935	37.78	0.820	0.820	0.65	0.53	0.53	5.0	5.00	7.19	3.83	6.62	4.98	15	1.05	342.30	341.90	343.08	342.62	345.57	352.58	29
932-933	24.95	0.200	0.200	0.75	0.15	0.15	5.0	5.00	7.19	1.08	6.46	3.27	15	1.00	343.00	342.75	343.42	343.12	347.26	347.03	30
908-910	74.83	0.090	1.550	0.85	0.08	1.06	5.0	5.58	7.00	7.40	21.54	7.70	18	4.21	331.70	328.55	332.74	329.22	336.65	333.06	31
910-911	32.50	0.130	1.460	0.75	0.10	0.98	5.0	5.49	7.03	6.89	9.21	5.51	18	0.77	332.15	331.90	333.16	332.89	336.65	336.65	32
911-912	115.06	0.300	1.330	0.75	0.23	0.88	5.0	5.20	7.12	6.29	11.37	4.58	18	1.17	333.60	332.25	334.56	333.54	342.43	336.65	33
912-913	32.50	0.160	1.030	0.85	0.14	0.66	5.0	5.10	7.15	4.71	6.20	5.27	15	0.92	334.25	333.95	335.12	334.79	342.43	342.43	34
913-914	34.09	0.870	0.870	0.60	0.52	0.52	5.0	5.00	7.19	3.75	7.03	3.99	15	1.19	334.75	334.35	335.53	335.45	338.00	342.43	35
928-929	114.28	0.300	0.470	0.70	0.21	0.34	5.0	5.13	7.14	2.41	11.14	5.38	15	2.98	344.05	340.65	344.67	341.06	348.58	344.93	36
929-930	24.50	0.170	0.170	0.75	0.13	0.13	5.0	5.00	7.19	0.92	5.05	1.12	15	0.61	344.30	344.15	345.02	345.02	348.58	348.58	37
941-943	46.32	0.220	1.540	0.75	0.17	1.01	5.0	6.48	6.73	6.81	18.20	2.75	24	0.65	349.40	349.10	350.75	350.74	358.19	357.12	38
943-944	24.50	0.200	1.320	0.75	0.15	0.85	5.0	6.40	6.75	5.72	8.22	4.48	18	0.61	350.05	349.90	351.02	350.98	358.19	358.19	39
944-945	35.09	0.180	1.120	0.75	0.14	0.70	5.0	6.28	6.78	4.74	5.45	4.93	15	0.71	350.55	350.30	351.44	351.24	358.49	358.19	40
945-946	53.06	0.100	0.940	0.70	0.07	0.56	5.0	6.09	6.84	3.85	5.24	3.71	15	0.66	351.00	350.65	351.89	351.77	358.75	358.49	41
946-947	58.53	0.110	0.840	0.70	0.08	0.49	5.0	5.86	6.91	3.41	4.99	3.37	15	0.60	351.45	351.10	352.31	352.20	358.68	358.75	42
947-948	77.85	0.290	0.730	0.60	0.17	0.42	5.0	5.55	7.01	2.92	4.89	3.32	15	0.57	352.00	351.55	352.73	352.58	356.38	358.68	43
948-949	187.39	0.440	0.440	0.55	0.24	0.24	5.0	5.00	7.19	1.74	9.08	2.61	15	1.98	355.80	352.10	356.33	353.08	360.08	356.38	44

Notes: IDF File = The Point IDF, Return Period = 10-yrs.

Project File: Storm System 900.sws

# Storm Sewer Tabulation

Project Name: Storm System 900

Stormwater Studio 2021 v 3.0.0.25

07-26-2021

Line ID	Length (ft)	Drng Area (ac)		Rational (C)	C x A		Tc (min)		Intensity (in/hr)	Total Q (cfs)	Capacity (cfs)	Velocity (ft/s)	Line		Invert Elev (ft)		HGL Elev (ft)		Surface Elev (ft)		Line No
		Incr	Total		Incr	Total	Inlet	Syst					Incr	Total	Incr	Total	Up	Dn	Up	Dn	
915-916	23.37	0.250	2.340	0.65	0.16	1.35	5.0	5.52	7.02	9.49	27.69	5.86	24	1.50	323.00	322.65	324.10	323.61	329.30	327.52	45
916-917	109.40	0.000	2.090	0.00	0.00	1.19	0.0	5.20	7.12	8.47	18.09	5.35	24	0.64	323.80	323.10	324.83	324.08	332.00	329.30	46
917-918	17.38	1.280	2.090	0.55	0.70	1.19	5.0	5.16	7.13	8.49	11.39	6.21	18	1.18	324.40	324.20	325.51	325.25	328.00	332.00	47
918-919	87.38	0.810	0.810	0.60	0.49	0.49	5.0	5.00	7.19	3.49	13.47	3.70	15	4.35	328.55	324.75	329.30	326.01	331.86	328.00	48

Notes: IDF File = The Point IDF, Return Period = 10-yrs.

Project File: Storm System 900.sws

# Energy Grade Line Calculations

Project Name: Storm System 900  
07-26-2021

Stormwater Studio 2021 v 3.0.0.25

Line No	Line Size (in)	Q (cfs)	Downstream						Length (ft)	Upstream							Pipe		Junction			
			Invert Elev (ft)	Depth (ft)	Area (sqft)	HGL Elev (ft)	Vel (ft/s)	Vel Head (ft)		EGL Elev (ft)	Invert Elev (ft)	Depth (ft)	Area (sqft)	HGL Elev (ft)	Vel (ft/s)	Vel Head (ft)	EGL Elev (ft)	n Value	Energy Loss (ft)	HGLa Elev (ft)	EGLa Elev (ft)	Energy Loss (ft)
1	42	47.95	310.00	3.50	9.62	314.55	4.99	0.39	314.94	56.33	315.50	2.12 <sup>2</sup>	6.10	317.62	7.86	0.96	318.58	0.013	3.645	318.72	319.11	0.53
2	42	47.24	319.80	2.05 <sup>‡</sup>	5.87	321.85	8.05	1.01	322.85	24.50	320.00	2.10 <sup>2</sup>	6.04	322.10	7.82	0.95	323.05	0.013	0.200	322.67	323.62	0.57
3	30	13.86	321.15	2.34	4.77	323.49	2.90	0.13	323.62	40.99	321.50	2.00	4.20	323.50	3.30	0.17	323.67	0.013	0.046	323.68	323.81	0.15
4	24	13.64	321.80	1.88	3.07	323.68	4.45	0.31	323.99	46.68	322.20	1.52	2.56	323.72	5.32	0.44	324.16	0.013	0.173	324.02	324.33	0.17
5	24	12.90	322.30	1.72	2.87	324.02	4.49	0.31	324.33	32.54	322.60	1.38	2.31	323.98	5.58	0.48	324.46	0.013	0.128	324.57	324.88	0.42
6	18	1.95	323.35	1.50	1.77	324.86	1.10	0.02	324.88	45.95	323.65	1.22	1.53	324.87	1.27	0.03	324.89	0.013	0.017	324.96	324.97	0.08
7	15	1.02	323.95	1.00	1.05	324.96	0.97	0.01	324.97	24.55	324.10	0.86	0.90	324.96	1.14	0.02	324.98	0.013	0.008	324.97	324.98	0.00
8	36	34.12	321.00	1.86 <sup>1</sup>	4.61	322.86	7.40	0.85	323.71	59.49	321.40	1.86 <sup>2</sup>	4.61	323.26	7.40	0.85	324.11	0.013	0.400	323.60	324.45	0.34
9	30	25.14	322.00	1.24 <sup>‡</sup>	2.44	323.24	10.32	1.66	324.48	123.46	324.65	1.68 <sup>2</sup>	3.50	326.33	7.19	0.80	327.13	0.013	2.651	326.54	327.34	0.21
10	15	0.95	326.10	1.23	1.22	327.33	0.78	0.01	327.34	24.50	326.35	0.98	1.03	327.33	0.92	0.01	327.34	0.013	0.005	327.34	327.35	0.00
11	30	23.75	325.05	0.98 <sup>‡</sup>	1.79	326.03	13.26	2.74	327.44	148.69	331.70	1.63 <sup>2</sup>	3.39	333.33	7.01	0.76	334.09	0.013	6.650	333.49	334.26	0.17
12	30	23.00	331.80	1.02 <sup>‡</sup>	1.88	332.82	12.23	2.33	334.25	103.33	336.05	1.60 <sup>2</sup>	3.32	337.65	6.92	0.74	338.40	0.013	4.145	338.30	338.78	0.38
13	30	20.40	336.65	1.05 <sup>‡</sup>	1.96	337.70	10.43	1.69	338.85	47.79	338.50	1.51 <sup>2</sup>	3.10	340.01	6.58	0.67	340.68	0.013	1.835	340.33	340.87	0.19
14	30	17.89	338.60	1.98	4.17	340.58	4.29	0.29	340.87	24.59	338.85	1.67	3.48	340.52	5.14	0.41	340.93	0.013	0.062	340.95	341.23	0.30
15	30	17.36	338.95	2.02	4.25	340.97	4.09	0.26	341.23	50.50	339.45	1.40	2.82	340.85	6.14	0.59	341.44	0.013	0.207	341.52	341.78	0.34
16	30	16.19	339.55	1.24 <sup>‡</sup>	2.42	340.79	6.69	0.70	341.77	118.94	340.45	1.34 <sup>2</sup>	2.69	341.79	6.02	0.56	342.36	0.013	0.583	342.48	342.71	0.36
17	15	2.49	348.00	0.58 <sup>‡</sup>	0.55	348.58	4.49	0.31	348.88	24.50	348.25	0.63 <sup>2</sup>	0.62	348.88	4.01	0.25	349.13	0.013	0.250	348.98	349.23	0.10
18	15	1.41	348.35	0.84	0.88	349.19	1.60	0.04	349.23	64.36	350.90	0.47 <sup>2</sup>	0.43	351.37	3.29	0.17	351.54	0.013	2.310	351.61	351.65	0.11
19	12	1.32	351.15	0.36 <sup>‡</sup>	0.25	351.51	5.24	0.43	351.82	31.69	352.00	0.49 <sup>2</sup>	0.38	352.49	3.47	0.19	352.67	0.013	0.850	352.58	352.77	0.09
20	12	0.55	352.10	0.65	0.54	352.75	1.02	0.02	352.77	116.01	354.40	0.32 <sup>2</sup>	0.21	354.71	2.60	0.11	354.82	0.013	2.051	354.82	354.84	0.02
21	15	0.43	333.05	1.21	1.21	334.26	0.36	0.00	334.26	42.30	334.70	0.26 <sup>2</sup>	0.19	334.96	2.30	0.08	335.04	0.013	0.786	335.06	335.06	0.02
22	24	9.70	347.55	0.95 <sup>‡</sup>	1.48	348.50	6.55	0.67	349.12	145.43	349.00	1.10 <sup>2</sup>	1.78	350.10	5.46	0.46	350.57	0.013	1.450	350.38	350.84	0.27

Notes: Return Period = 10-yrs. <sup>1</sup> Critical depth. <sup>2</sup> Critical depth. <sup>‡</sup> Supercritical. Project File: Storm System 900.sws

# Energy Grade Line Calculations

Project Name: Storm System 900  
07-26-2021

Stormwater Studio 2021 v 3.0.0.25

Line No	Line Size (in)	Q (cfs)	Downstream						Length (ft)	Upstream						Pipe		Junction			
			Invert Elev (ft)	Depth (ft)	Area (sqft)	HGL Elev (ft)	Vel (ft/s)	Vel Head (ft)		EGL Elev (ft)	Invert Elev (ft)	Depth (ft)	Area (sqft)	HGL Elev (ft)	Vel (ft/s)	Vel Head (ft)	EGL Elev (ft)	n Value	Energy Loss (ft)	HGLa Elev (ft)	EGLa Elev (ft)
23	15	2.53	352.70	0.63†	0.62	353.33	4.08	0.26	353.59	24.50	0.64	0.63	353.49	4.01	0.25	353.74	0.013	0.150	353.54	353.79	0.05
24	24	10.78	325.00	0.73†	1.04	325.73	10.34	1.66	326.67	63.51	1.16²	1.89	329.16	5.69	0.50	329.67	0.013	3.001	329.42	329.92	0.26
25	15	3.22	328.80	0.40†	0.34	329.20	9.57	1.42	329.92	22.07	0.72²	0.73	331.92	4.42	0.30	332.22	0.013	2.308	332.12	332.28	0.06
26	15	1.98	337.65	1.08	1.12	338.73	1.76	0.05	338.78	24.50	0.88	0.92	338.73	2.15	0.07	338.80	0.013	0.027	338.83	338.88	0.07
27	15	1.11	337.95	0.90	0.95	338.85	1.17	0.02	338.87	110.66	0.42²	0.36	341.18	3.05	0.14	341.32	0.013	2.446	341.40	341.42	0.10
28	12	0.65	341.00	0.23†	0.13	341.23	4.81	0.36	341.48	108.01	0.34²	0.24	344.49	2.73	0.12	344.61	0.013	3.129	344.55	344.63	0.02
29	15	3.83	341.90	0.72†	0.73	342.62	5.23	0.42	343.04	37.78	0.78²	0.81	343.08	4.73	0.35	343.43	0.013	0.397	343.15	343.50	0.07
30	15	1.08	342.75	0.37†	0.31	343.12	3.51	0.19	343.31	24.95	0.42²	0.36	343.42	3.02	0.14	343.56	0.013	0.250	343.44	343.59	0.03
31	18	7.40	328.55	0.67†	0.76	329.22	9.74	1.47	330.09	74.83	1.04²	1.30	332.74	5.67	0.50	333.24	0.013	3.149	332.92	333.42	0.19
32	18	6.89	331.90	0.99†	1.24	332.89	5.55	0.48	333.41	32.50	1.01	1.26	333.16	5.47	0.47	333.62	0.013	0.208	333.45	333.78	0.16
33	18	6.29	332.25	1.29	1.62	333.54	3.88	0.23	333.78	115.06	0.96²	1.19	334.56	5.28	0.43	334.99	0.013	1.214	334.98	335.22	0.23
34	15	4.71	333.95	0.84†	0.88	334.79	5.38	0.45	335.28	32.50	0.87	0.91	335.12	5.15	0.41	335.53	0.013	0.258	335.32	335.62	0.08
35	15	3.75	334.35	1.10	1.14	335.45	3.28	0.17	335.61	34.09	0.78²	0.80	335.53	4.69	0.34	335.87	0.013	0.255	335.77	335.93	0.07
36	15	2.41	340.65	0.41†	0.35	341.06	6.81	0.72	341.52	114.28	0.62²	0.61	344.67	3.96	0.24	344.92	0.013	3.400	344.80	345.04	0.12
37	15	0.92	344.15	0.87	0.91	345.02	1.00	0.02	345.04	24.50	0.72	0.74	345.02	1.25	0.02	345.05	0.013	0.009	345.04	345.05	0.00
38	24	6.81	349.10	1.64	2.76	350.74	2.47	0.09	350.84	46.32	1.35	2.25	350.75	3.03	0.14	350.89	0.013	0.052	350.98	351.07	0.18
39	18	5.72	349.90	1.08	1.36	350.98	4.20	0.27	351.25	24.50	0.97	1.21	351.02	4.75	0.35	351.37	0.013	0.114	351.24	351.52	0.15
40	15	4.74	350.30	0.94	0.99	351.24	4.77	0.35	351.60	35.09	0.89	0.93	351.44	5.10	0.40	351.84	0.013	0.243	351.60	351.95	0.11
41	15	3.85	350.65	1.12	1.16	351.77	3.31	0.17	351.95	53.06	0.89	0.94	351.89	4.10	0.26	352.16	0.013	0.210	352.17	352.34	0.19
42	15	3.41	351.10	1.10	1.15	352.20	2.97	0.14	352.34	58.53	0.86	0.91	352.31	3.76	0.22	352.53	0.013	0.193	352.56	352.70	0.16
43	15	2.92	351.55	1.03	1.08	352.58	2.70	0.11	352.70	77.85	0.73	0.74	352.73	3.94	0.24	352.97	0.013	0.273	353.02	353.13	0.16
44	15	1.74	352.10	0.98	1.04	353.08	1.68	0.04	353.13	187.39	0.53²	0.49	356.33	3.53	0.19	356.53	0.013	3.399	356.52	356.56	0.04

Notes: Return Period = 10-yrs. ² Critical depth. † Supercritical.

# Energy Grade Line Calculations

Project Name: Storm System 900

Stormwater Studio 2021 v 3.0.0.25

07-26-2021

Line No	Line Size (in)	Q (cfs)	Downstream							Length (ft)	Upstream							Pipe		Junction		
			Invert Elev (ft)	Depth (ft)	Area (sqft)	HGL Elev (ft)	Vel (ft/s)	Vel Head (ft)	EGL Elev (ft)		Invert Elev (ft)	Depth (ft)	Area (sqft)	HGL Elev (ft)	Vel (ft/s)	Vel Head (ft)	EGL Elev (ft)	n Value	Enrgy Loss (ft)	HGLa Elev (ft)	EGLa Elev (ft)	Enrgy Loss (ft)
45	24	9.49	322.65	0.96†	1.50	323.61	6.33	0.62	324.45	23.37	323.00	1.10	1.76	324.10	5.38	0.45	324.55	0.013	0.098	324.50	324.69	0.14
46	24	8.47	323.10	0.98†	1.54	324.08	5.51	0.47	324.70	109.40	323.80	1.03²	1.63	324.83	5.19	0.42	325.25	0.013	0.549	325.39	325.59	0.34
47	18	8.49	324.20	1.06†	1.33	325.25	6.37	0.63	325.88	17.38	324.40	1.11²	1.40	325.51	6.04	0.57	326.08	0.013	0.199	325.71	326.20	0.12
48	15	3.49	324.75	1.25	1.23	326.01	2.85	0.13	326.14	87.38	328.55	0.75²	0.77	329.30	4.56	0.32	329.63	0.013	3.486	329.56	329.69	0.06

Notes: Return Period = 10-yrs. ² Critical depth. † Supercritical.

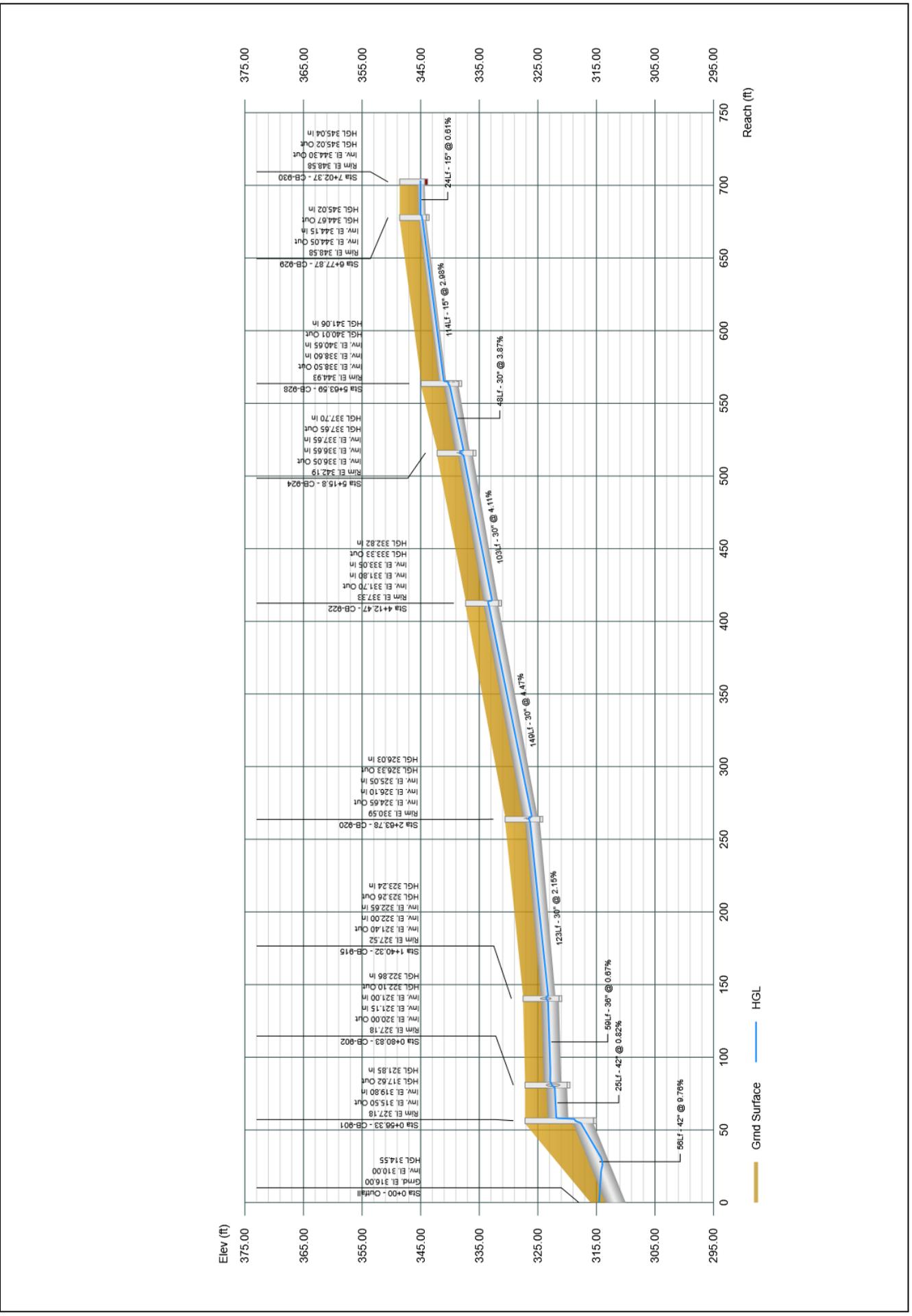
Project File: Storm System 900.sws

# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 900

07-21-2021

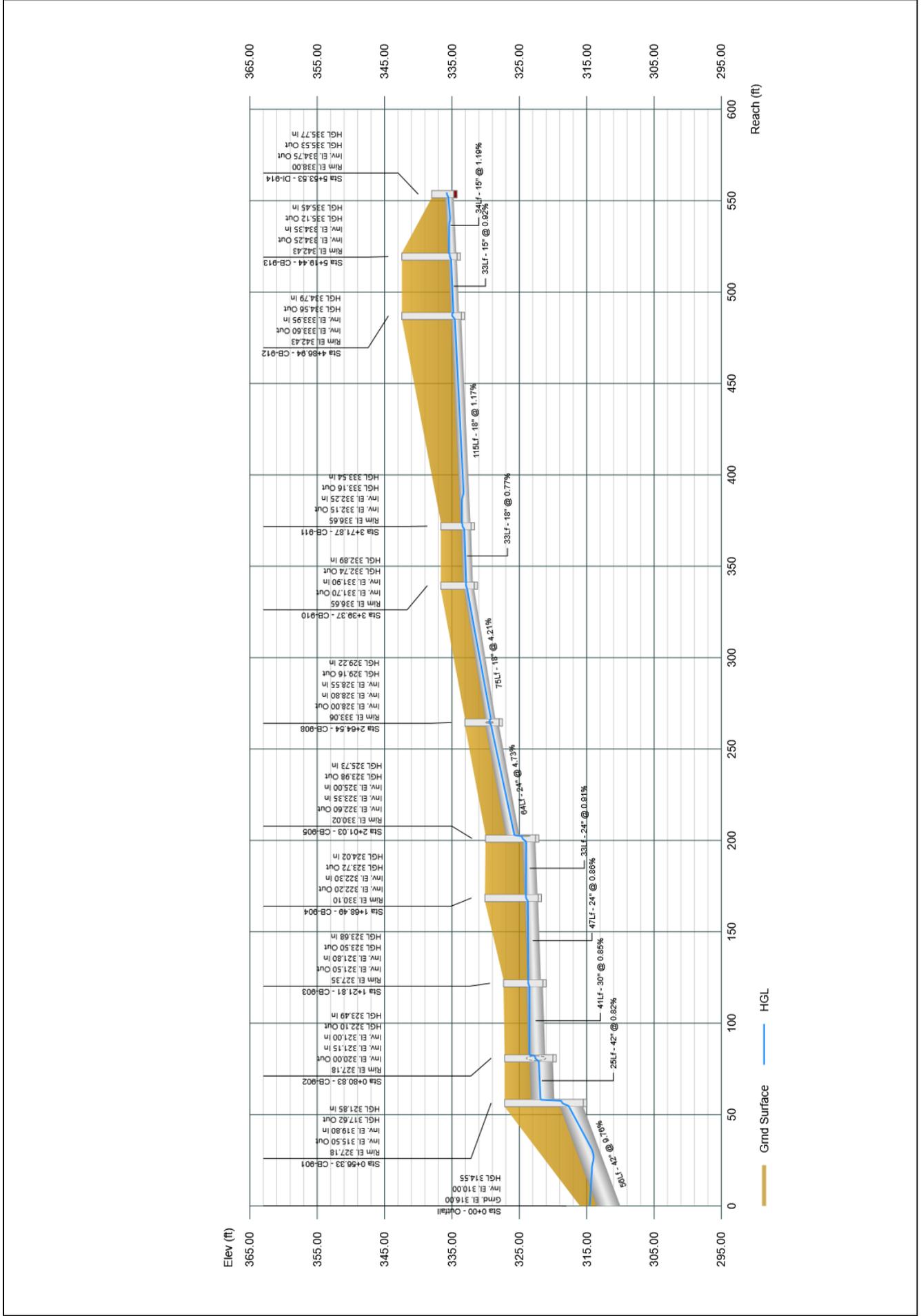


# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 900

07-21-2021

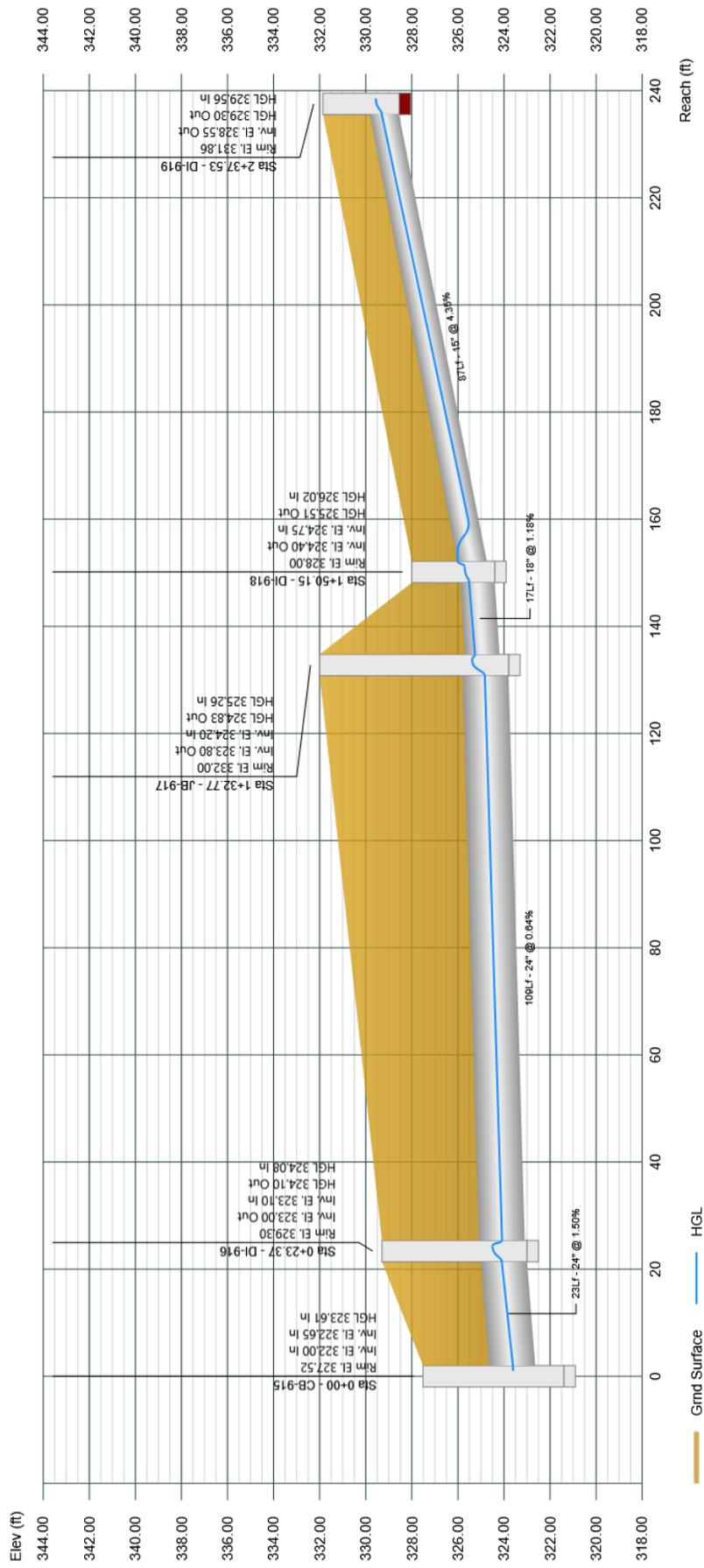


# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 900

07-19-2021

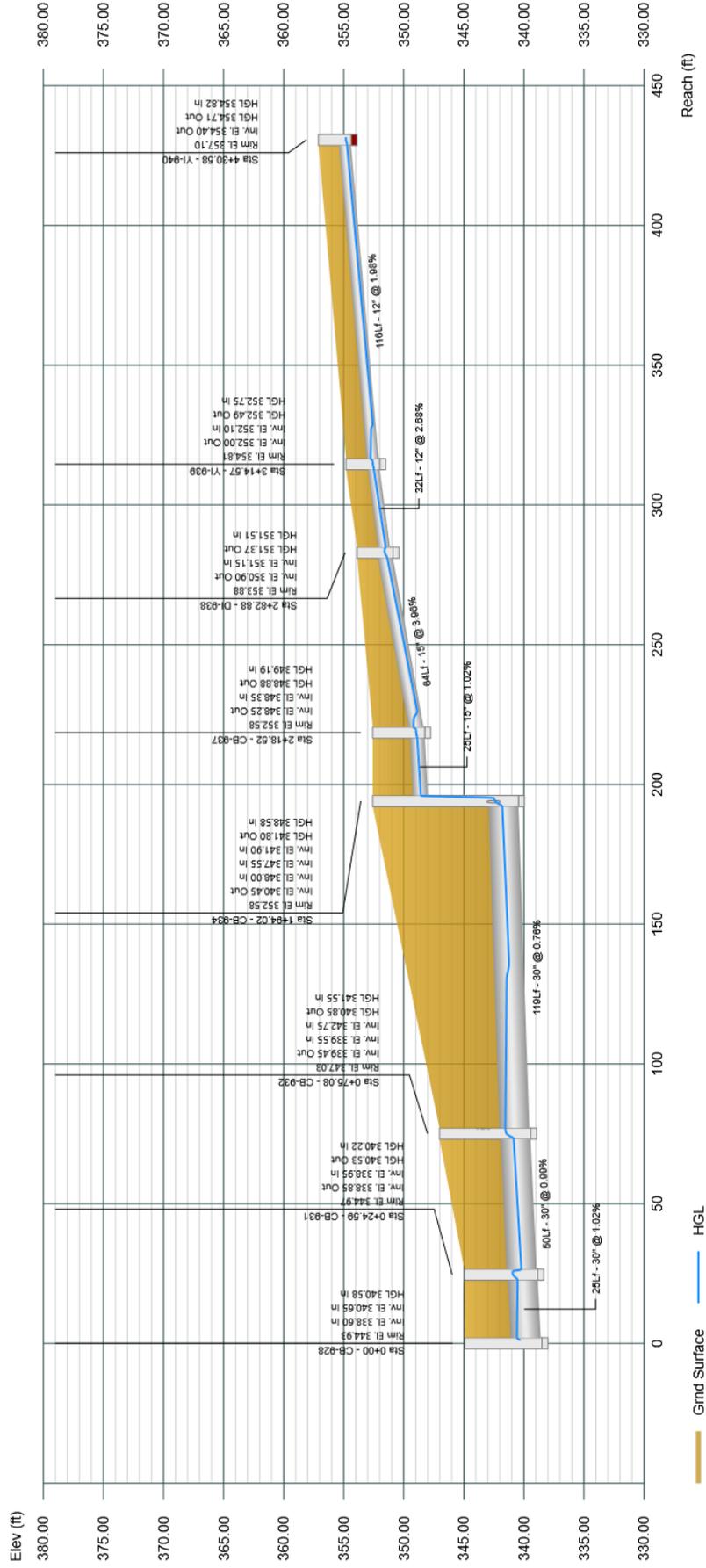


# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 900

07-19-2021

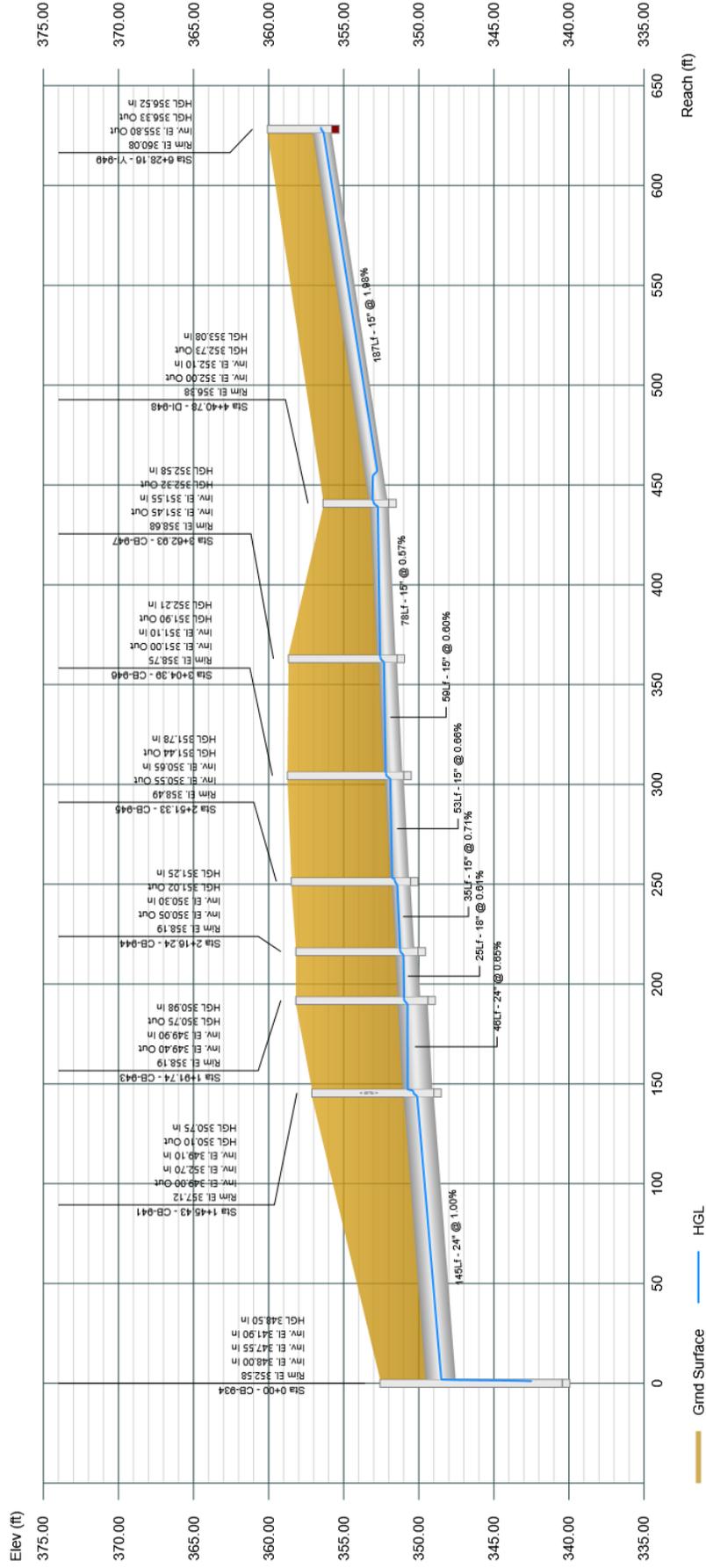


# Profile View

Stormwater Studio 2021 v 3.0.0.25

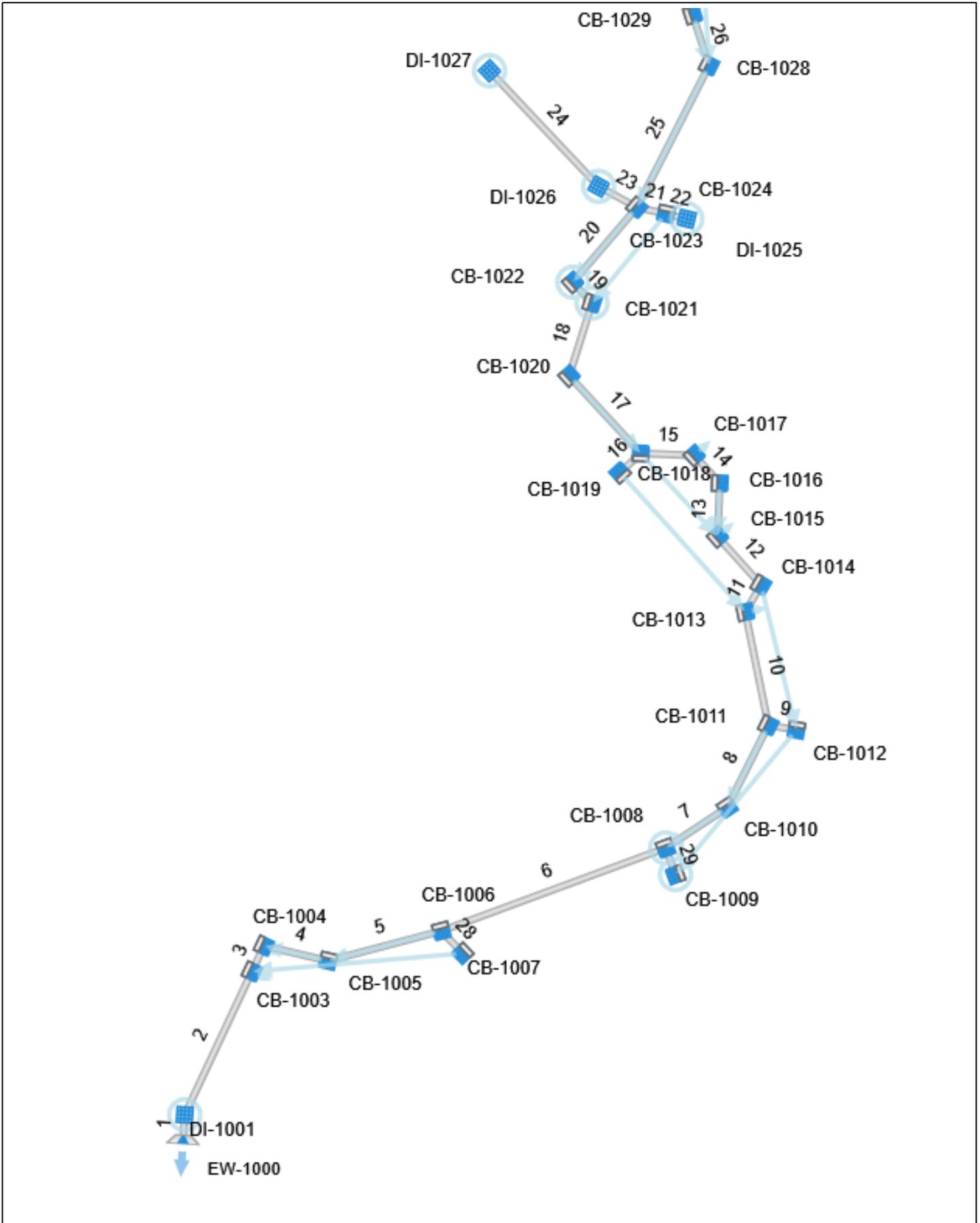
Project Name: Storm System 900

07-19-2021



*SYSTEM 1000 – REPORTS AND PROFILES*

# Plan View



# Storm Sewer Tabulation

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 1000

07-19-2021

Line ID	Length (ft)	Drng Area		Rational	C x A		Tc		Intensity (in/hr)	Total Q (cfs)	Capacity (cfs)	Velocity (ft/s)	Line		Invert Elev		HGL Elev		Surface Elev		Line No
		Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	
1000-1001	17.48	0.320	4.750	0.65	0.21	3.45	5.0	8.84	3.99	13.76	75.99	2.80	30	3.43	318.60	318.00	322.02	322.00	324.33	320.70	1
1001-1003	136.72	0.200	4.430	0.75	0.15	3.24	5.0	8.69	4.00	12.93	112.57	4.09	30	7.53	329.00	318.70	330.20	322.08	334.91	324.33	2
1003-1004	24.50	0.050	4.230	0.65	0.03	3.09	5.0	8.63	4.00	12.33	36.78	4.05	30	0.80	329.30	329.10	330.68	330.73	334.91	334.91	3
1004-1005	56.79	0.090	4.180	0.75	0.07	3.05	5.0	8.55	4.00	12.20	93.48	7.85	30	5.20	332.35	329.40	333.52	330.13	337.98	334.91	4
1005-1006	101.19	0.060	4.090	0.75	0.05	2.99	5.0	8.32	4.00	11.94	41.72	4.56	30	1.03	333.50	332.45	334.65	334.00	341.70	337.98	5
1006-1008	206.31	0.220	3.980	0.75	0.17	2.90	5.0	7.76	4.00	11.61	33.23	5.66	30	0.66	334.95	333.60	336.09	334.64	340.47	341.70	6
1008-1010	63.78	0.070	3.420	0.75	0.05	2.48	5.0	7.61	4.00	9.93	22.48	5.92	24	0.99	336.10	335.47	337.22	336.47	341.20	340.47	7
1010-1011	79.35	0.060	3.350	0.85	0.05	2.43	5.0	7.48	4.00	9.72	38.48	7.12	24	2.89	338.50	336.20	339.60	336.97	344.15	341.20	8
1011-1012	24.49	0.110	0.110	0.78	0.09	0.09	5.0	5.00	4.00	0.34	5.00	0.87	15	0.60	339.90	339.75	340.29	340.29	344.15	344.15	9
1011-1013	99.76	0.040	3.180	0.85	0.03	2.30	5.0	7.27	4.00	9.17	26.78	4.52	24	1.40	340.00	338.60	341.08	340.08	348.93	344.15	10
1013-1014	27.02	0.040	3.140	0.80	0.03	2.26	5.0	7.19	4.00	9.04	19.07	4.08	24	0.71	340.30	340.10	341.53	341.55	349.38	348.93	11
1014-1015	56.00	0.050	3.100	0.75	0.04	2.23	5.0	7.04	4.00	8.91	19.26	5.45	24	0.73	340.80	340.40	341.86	341.40	351.09	349.38	12
1015-1016	46.27	0.200	3.050	0.75	0.15	2.19	5.0	6.90	4.00	8.76	18.14	4.24	24	0.64	341.20	340.90	342.32	342.34	353.41	351.09	13
1016-1017	32.50	0.180	2.850	0.75	0.14	2.04	5.0	6.80	4.00	8.16	17.96	3.78	24	0.63	341.50	341.30	342.71	342.71	353.41	353.41	14
1017-1018	46.36	0.120	2.670	0.75	0.09	1.91	5.0	6.66	4.00	7.62	18.14	3.80	24	0.64	341.90	341.60	342.99	343.01	352.18	353.41	15
1018-1019	24.50	0.070	0.070	0.85	0.06	0.06	5.0	5.00	4.00	0.24	5.79	2.08	15	0.80	347.90	347.70	348.10	347.88	352.18	352.18	16
1018-1020	91.00	0.010	2.480	0.90	0.01	1.76	5.0	6.38	4.00	7.03	17.52	4.99	24	0.60	342.55	342.00	343.49	342.90	353.19	352.18	17
1020-1021	65.80	0.380	2.470	0.65	0.25	1.75	5.0	6.17	4.00	6.99	17.74	4.97	24	0.62	343.05	342.65	343.99	343.55	352.68	353.19	18
1021-1022	24.50	0.090	2.090	0.85	0.08	1.50	5.0	6.10	4.00	6.00	20.29	3.27	24	0.80	343.35	343.15	344.38	344.42	352.68	352.68	19
1022-1023	84.99	0.150	2.000	0.75	0.11	1.43	5.0	5.82	4.00	5.70	18.20	4.70	24	0.65	344.00	343.45	344.85	344.25	353.59	352.68	20
1023-1024	25.68	0.160	0.450	0.85	0.14	0.32	5.0	5.05	4.00	1.30	5.75	3.37	15	0.79	349.45	349.25	349.91	349.67	353.70	353.59	21
1024-1025	18.40	0.290	0.290	0.65	0.19	0.19	5.0	5.00	4.00	0.75	13.47	3.73	15	4.35	350.50	349.70	350.85	349.93	353.79	353.70	22

Notes: IDF File = The Point IDF, Return Period = 1-yr.

Project File: Storm System 1000.sws

# Storm Sewer Tabulation

Project Name: Storm System 1000  
07-19-2021

Stormwater Studio 2021 v 3.0.0.25

Line ID	Length (ft)	Drng Area (ac)		Rational (C)	C x A		Tc (min)		Intensity (in/hr)	Total Q (cfs)	Capacity (cfs)	Velocity (ft/s)	Line		Invert Elev (ft)		HGL Elev (ft)		Surface Elev (ft)		Line No
		Incr	Total		Incr	Total	Inlet	Syst					Incr	Total	Incr	Total	Incr	Total	Incr	Total	
1023-1026	37.73	0.100	0.620	0.65	0.07	0.40	5.0	5.65	4.00	1.61	5.22	2.55	344.75	344.50	345.29	345.29	345.29	352.66	353.59	23	
1026-1027	137.25	0.520	0.520	0.65	0.34	0.34	5.0	5.00	4.00	1.35	5.09	2.77	345.70	344.85	346.17	345.45	348.96	352.66	24		
1023-1028	137.56	0.290	0.780	0.75	0.22	0.59	5.0	5.28	4.00	2.34	7.78	4.62	351.30	349.30	351.91	349.79	355.66	353.59	25		
1028-1029	46.02	0.250	0.490	0.75	0.19	0.37	5.0	5.13	4.00	1.47	8.22	2.51	352.15	351.40	352.63	352.23	356.69	355.66	26		
1029-1030	24.55	0.240	0.240	0.75	0.18	0.18	5.0	5.00	4.00	0.72	5.79	1.62	352.45	352.25	352.86	352.87	356.72	356.69	27		
1006-1007	26.65	0.050	0.050	0.75	0.04	0.04	5.0	5.00	4.00	0.15	5.59	1.84	337.60	337.40	337.75	337.54	341.87	341.70	28		
1008-1009	24.50	0.340	0.340	0.75	0.26	0.26	5.0	5.00	4.00	1.02	5.79	1.97	336.20	336.00	336.67	336.68	340.47	340.47	29		

Notes: IDF File = The Point IDF, Return Period = 1-yrs.

Project File: Storm System 1000.sws

# Energy Grade Line Calculations

Stormwater Studio 2021 v 3.0.0.25

Line No	Line Size (in)	Q (cfs)	Downstream						Length (ft)	Upstream							Pipe		Junction			
			Invert Elev (ft)	Depth (ft)	Area (sqft)	HGL Elev (ft)	Vel (ft/s)	Vel Head (ft)		EGL Elev (ft)	Invert Elev (ft)	Depth (ft)	Area (sqft)	HGL Elev (ft)	Vel (ft/s)	Vel Head (ft)	EGL Elev (ft)	n Value	Energy Loss (ft)	HGLa Elev (ft)	EGLa Elev (ft)	Energy Loss (ft)
1	30	13.76	318.00	2.50	4.91	322.00	2.80	0.12	322.12	17.48	318.60	2.50	4.91	322.02	2.80	0.12	322.14	0.013	0.020	322.07	322.19	0.05
2	30	12.93	318.70	2.50	4.91	322.08	2.64	0.11	322.19	136.72	329.00	1.20 <sup>‡</sup>	2.33	330.20	5.54	0.48	330.68	0.013	8.487	330.73	330.83	0.15
3	30	12.33	329.10	1.62	3.37	330.73	3.66	0.21	330.93	24.50	329.30	1.38	2.78	330.68	4.44	0.31	330.99	0.013	0.053	331.05	331.26	0.27
4	30	12.20	329.40	0.73 <sup>‡</sup>	1.19	330.13	10.27	1.64	331.25	56.79	332.35	1.17 <sup>‡</sup>	2.25	333.52	5.43	0.46	333.98	0.013	2.726	334.00	334.19	0.22
5	30	11.94	332.45	1.55	3.19	334.00	3.74	0.22	334.21	101.19	333.50	1.15 <sup>‡</sup>	2.22	334.65	5.39	0.45	335.10	0.013	0.888	335.05	335.27	0.16
6	30	11.61	333.60	1.04 <sup>‡</sup>	1.94	334.64	5.98	0.56	335.29	206.31	334.95	1.14 <sup>‡</sup>	2.18	336.09	5.33	0.44	336.53	0.013	1.244	336.48	336.72	0.19
7	24	9.93	335.47	1.00 <sup>‡</sup>	1.57	336.47	6.33	0.62	337.06	63.78	336.10	1.12 <sup>‡</sup>	1.80	337.22	5.51	0.47	337.69	0.013	0.630	337.46	337.93	0.24
8	24	9.72	336.20	0.77 <sup>‡</sup>	1.11	336.97	8.77	1.20	337.92	79.35	338.50	1.10 <sup>‡</sup>	1.78	339.60	5.46	0.46	340.06	0.013	2.142	340.06	340.30	0.23
9	15	0.34	339.75	0.54	0.50	340.29	0.68	0.01	340.30	24.49	339.90	0.39	0.32	340.29	1.06	0.02	340.30	0.013	0.009	340.30	340.31	0.00
10	24	9.17	338.60	1.47	2.48	340.08	3.70	0.21	340.29	99.76	340.00	1.07 <sup>‡</sup>	1.72	341.08	5.35	0.44	341.52	0.013	1.231	341.55	341.76	0.24
11	24	9.04	340.10	1.45	2.43	341.55	3.72	0.21	341.76	27.02	340.30	1.23	2.03	341.53	4.45	0.31	341.84	0.013	0.072	341.88	342.09	0.26
12	24	8.91	340.40	1.00 <sup>‡</sup>	1.58	341.40	5.64	0.50	342.09	56.00	340.80	1.06	1.70	341.86	5.26	0.43	342.29	0.013	0.203	342.34	342.53	0.24
13	24	8.76	340.90	1.44	2.41	342.34	3.63	0.21	342.54	46.27	341.20	1.12	1.81	342.32	4.85	0.37	342.68	0.013	0.141	342.70	342.90	0.22
14	24	8.16	341.30	1.42	2.38	342.71	3.43	0.18	342.90	32.50	341.50	1.21	1.98	342.71	4.13	0.26	342.97	0.013	0.076	342.99	343.17	0.20
15	24	7.62	341.60	1.40	2.35	343.01	3.24	0.16	343.17	46.36	341.90	1.09	1.75	342.99	4.37	0.30	343.29	0.013	0.118	343.32	343.48	0.19
16	15	0.24	347.70	0.18 <sup>‡</sup>	0.11	347.88	2.21	0.08	347.96	24.50	347.90	0.20 <sup>‡</sup>	0.12	348.10	1.94	0.06	348.15	0.013	0.197	348.11	348.17	0.01
17	24	7.03	342.00	0.90 <sup>‡</sup>	1.37	342.90	5.13	0.41	343.48	91.00	342.55	0.94 <sup>‡</sup>	1.45	343.49	4.85	0.37	343.85	0.013	0.377	343.91	344.07	0.22
18	24	6.99	342.65	0.90 <sup>‡</sup>	1.37	343.55	5.10	0.40	344.09	65.80	343.05	0.94 <sup>‡</sup>	1.44	343.99	4.84	0.36	344.35	0.013	0.268	344.38	344.55	0.19
19	24	6.00	343.15	1.26	2.09	344.42	2.87	0.13	344.55	24.50	343.35	1.03	1.64	344.38	3.67	0.21	344.59	0.013	0.047	344.66	344.78	0.19
20	24	5.70	343.45	0.80 <sup>‡</sup>	1.16	344.25	4.89	0.37	344.79	84.99	344.00	0.85 <sup>‡</sup>	1.26	344.85	4.51	0.32	345.16	0.013	0.377	345.22	345.35	0.19
21	15	1.30	349.25	0.42 <sup>‡</sup>	0.37	349.67	3.53	0.19	349.86	25.68	349.45	0.46 <sup>‡</sup>	0.40	349.91	3.21	0.16	350.07	0.013	0.204	349.96	350.12	0.06
22	15	0.75	349.70	0.23 <sup>‡</sup>	0.16	349.93	4.74	0.35	350.16	18.40	350.50	0.35 <sup>‡</sup>	0.28	350.85	2.71	0.11	350.96	0.013	0.800	350.87	350.98	0.02

Notes: Return Period = 1-yr. <sup>‡</sup> Critical depth. † Supercritical.

# Energy Grade Line Calculations

Project Name: Storm System 1000  
07-19-2021

Stormwater Studio 2021 v 3.0.0.25

Line No	Line Size (in)	Q (cfs)	Downstream							Length (ft)	Upstream							Pipe		Junction		
			Invert Elev (ft)	Depth (ft)	Area (sqft)	HGL Elev (ft)	Vel (ft/s)	Vel Head (ft)	EGL Elev (ft)		Invert Elev (ft)	Depth (ft)	Area (sqft)	HGL Elev (ft)	Vel (ft/s)	Vel Head (ft)	EGL Elev (ft)	n Value	Energy Loss (ft)	HGLa Elev (ft)	EGLa Elev (ft)	Energy Loss (ft)
23	15	1.61	344.50	0.79	0.81	345.29	1.98	0.06	345.35	37.73	344.75	0.55	0.52	345.29	3.11	0.15	345.45	0.013	0.097	345.45	345.51	0.07
24	15	1.35	344.85	0.61	0.59	345.45	2.29	0.08	345.53	137.25	345.70	0.47 <sup>2</sup>	0.42	346.17	3.25	0.16	346.33	0.013	0.795	346.28	346.36	0.03
25	15	2.34	349.30	0.49 <sup>‡</sup>	0.44	349.79	5.32	0.44	350.15	137.56	351.30	0.61 <sup>‡</sup>	0.60	351.91	3.92	0.24	352.15	0.013	1.996	352.04	352.28	0.13
26	15	1.47	351.40	0.83	0.87	352.23	1.69	0.04	352.28	46.02	352.15	0.49 <sup>2</sup>	0.44	352.63	3.34	0.17	352.80	0.013	0.526	352.85	352.89	0.09
27	15	0.72	352.25	0.62	0.60	352.87	1.19	0.02	352.89	24.55	352.45	0.41	0.35	352.86	2.05	0.07	352.93	0.013	0.034	352.92	352.94	0.01
28	15	0.15	337.40	0.14 <sup>‡</sup>	0.08	337.54	1.97	0.06	337.60	26.65	337.60	0.15	0.09	337.75	1.71	0.05	337.80	0.013	0.200	337.76	337.81	0.01
29	15	1.02	336.00	0.68	0.68	336.68	1.50	0.04	336.72	24.50	336.20	0.47	0.42	336.67	2.44	0.09	336.76	0.013	0.044	336.74	336.78	0.02

Notes: Return Period = 1-yr. <sup>‡</sup> Critical depth. <sup>‡</sup> Normal depth. <sup>‡</sup> Supercritical.

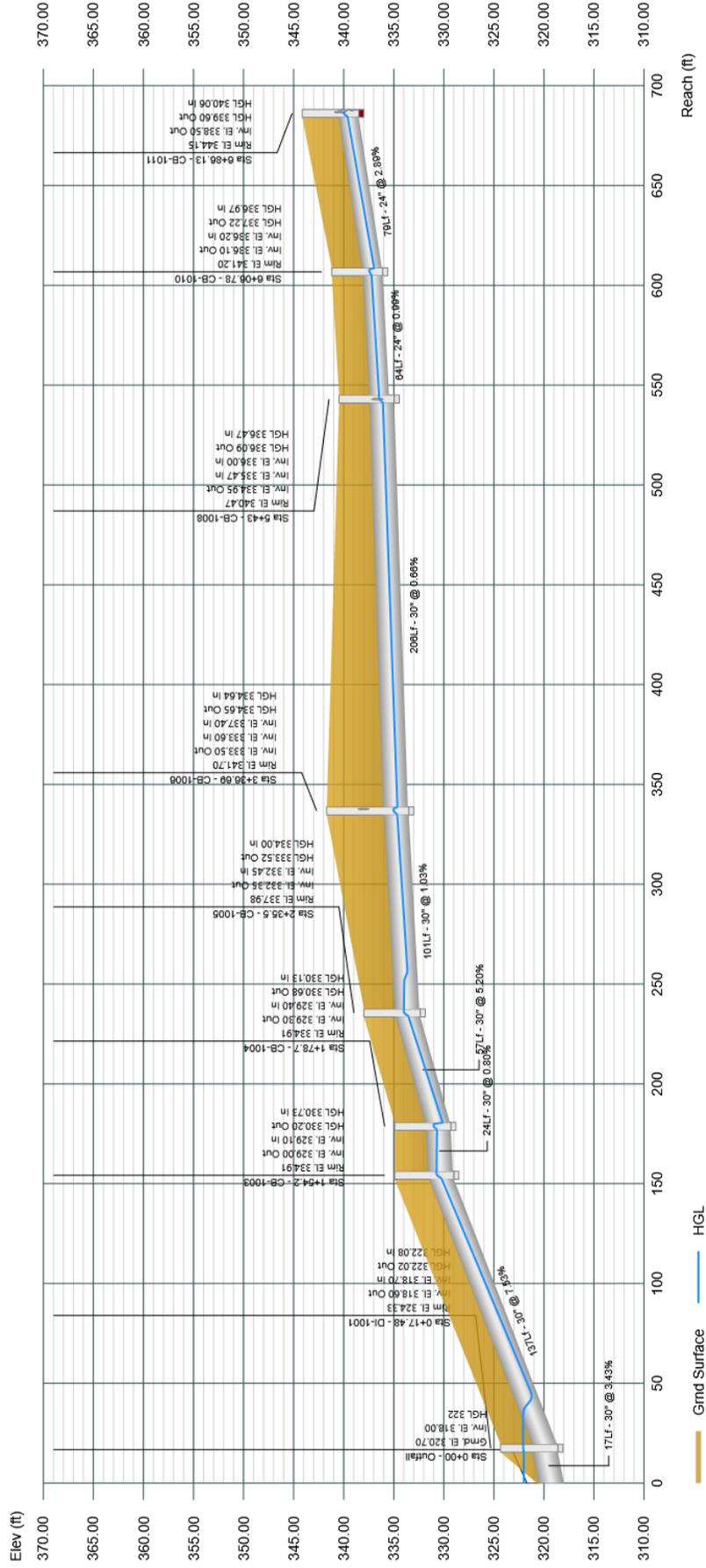
Project File: Storm System 1000.sws

# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 1000

07-19-2021

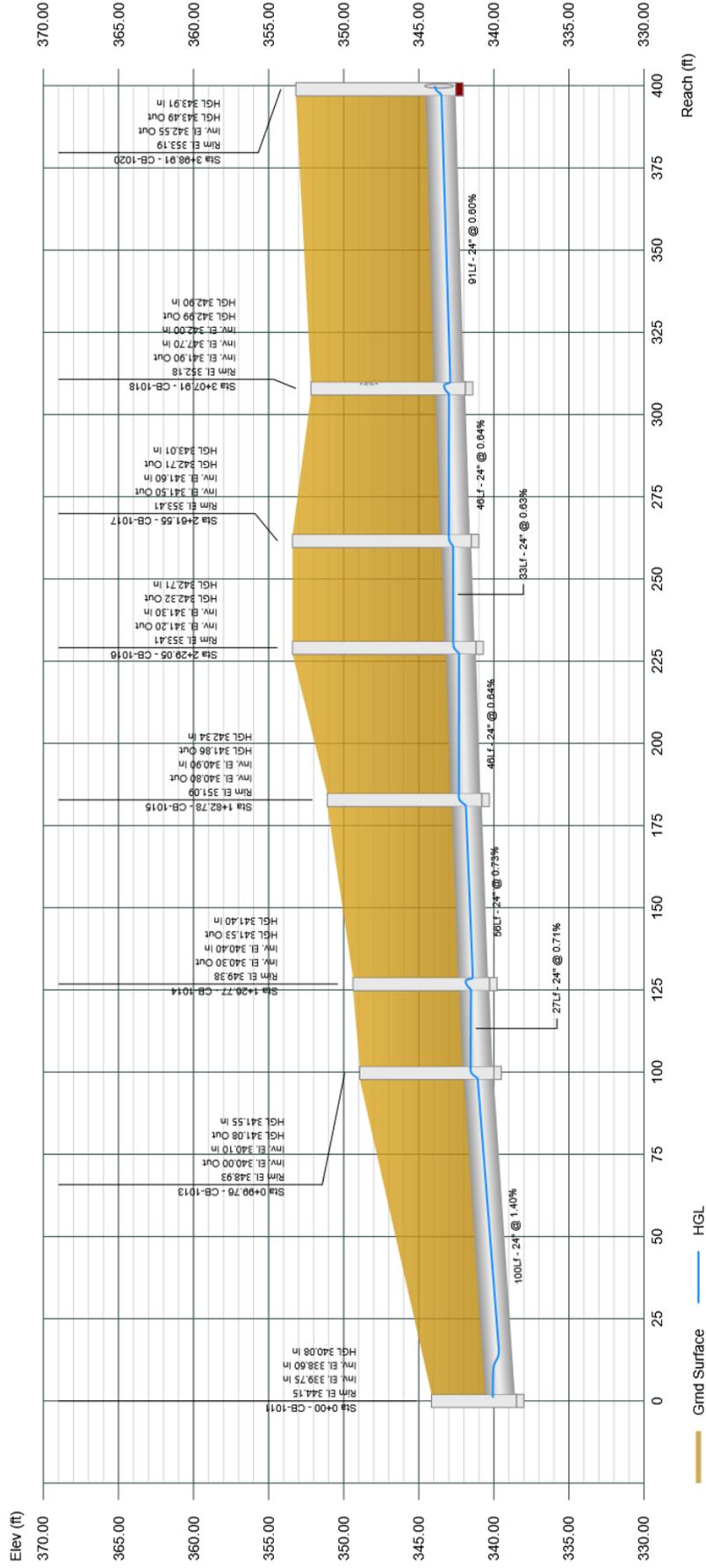


# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 1000

07-19-2021

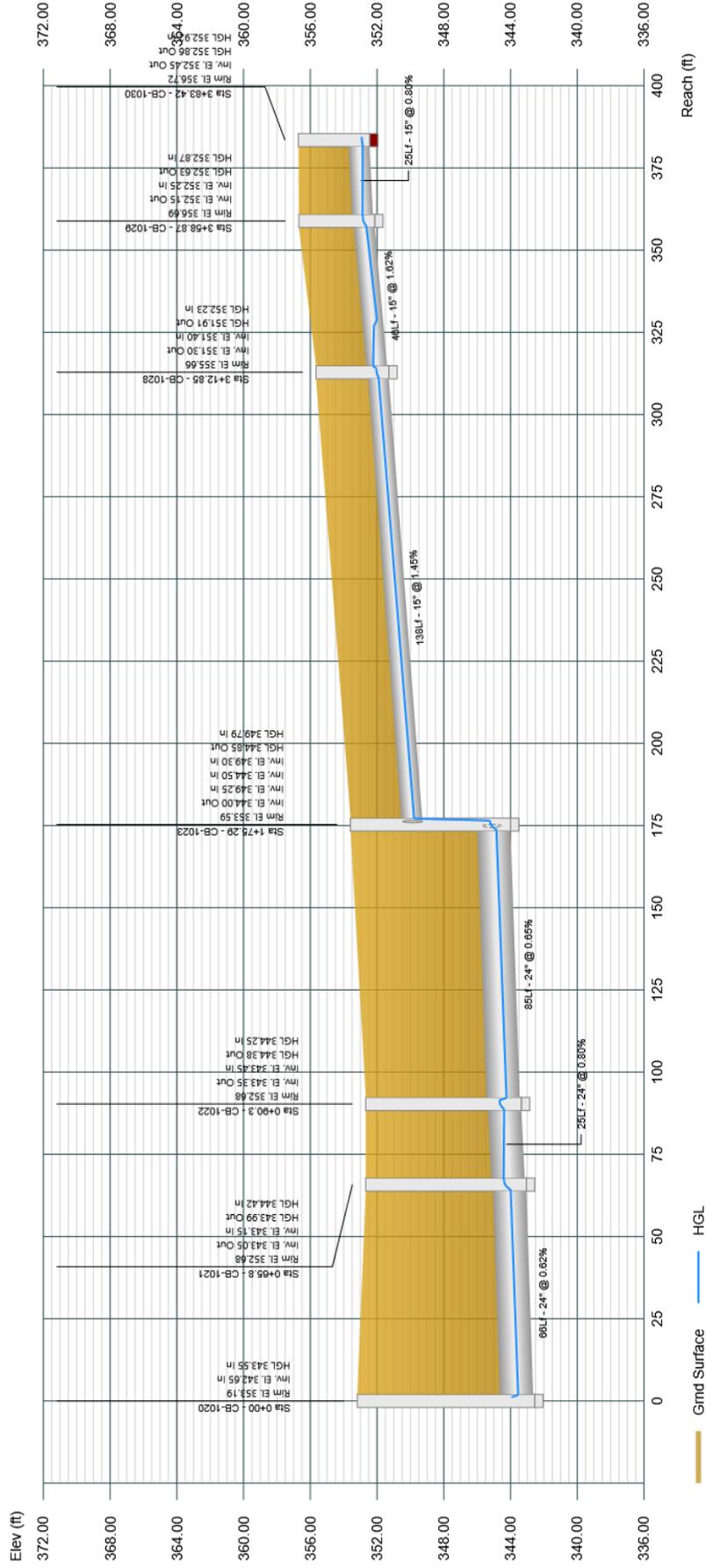


# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 1000

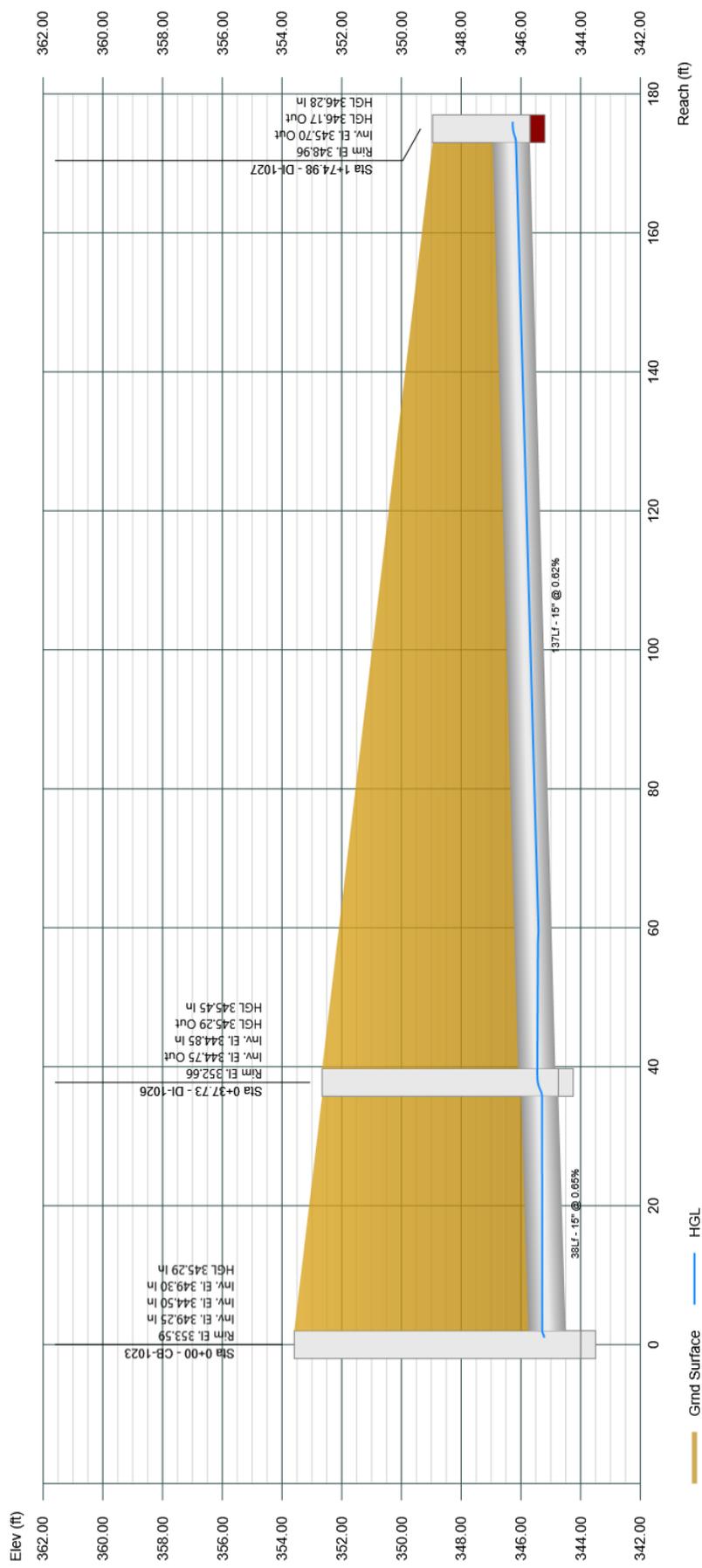
07-19-2021



# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 1000  
07-19-2021



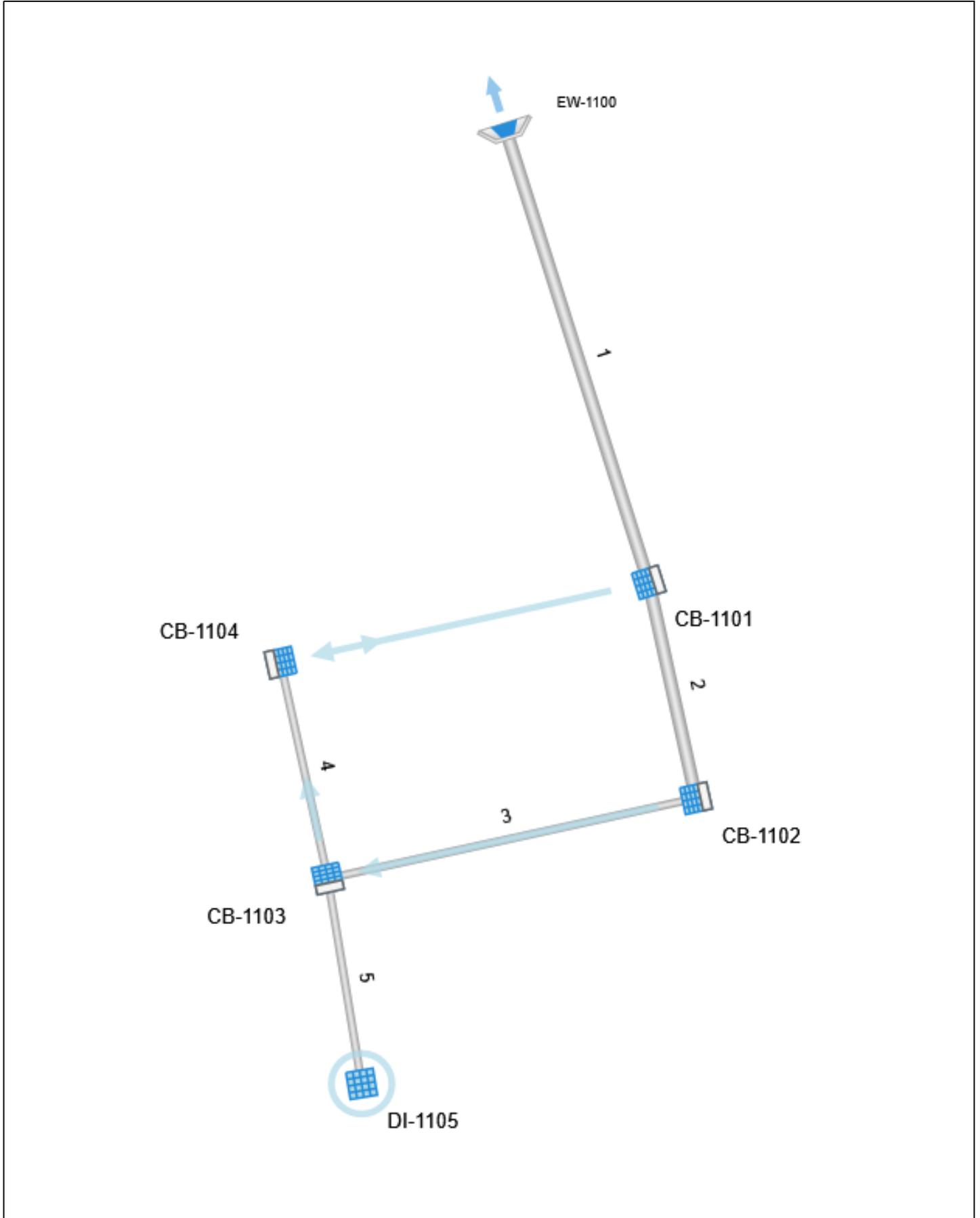
*SYSTEM 1100 – REPORTS AND PROFILES*

# Plan View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 1100

07-19-2021



# Storm Sewer Tabulation

Project Name: Storm System 1100

Stormwater Studio 2021 v 3.0.0.25

07-19-2021

Line ID	Length (ft)	Drng Area		Rational	C x A		Tc		Intensity (in/hr)	Total Q (cfs)	Capacity (cfs)	Velocity (ft/s)	Line		Invert Elev		HGL Elev		Surface Elev		Line No
		Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Incr	Total	Size (in)	Slope (%)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	
1100-1101	68.31	0.070	1.150	0.90	0.06	0.81	5.0	5.52	7.04	5.67	46.60	1.91	24	4.25	312.90	310.00	314.58	314.55	323.93	313.00	1
1101-1102	32.50	0.170	1.080	0.80	0.14	0.74	5.0	5.41	7.07	5.26	19.84	2.04	24	0.77	313.25	313.00	314.67	314.67	323.93	323.93	2
1102-1103	55.29	0.040	0.910	0.85	0.03	0.61	5.0	5.22	7.13	4.33	5.22	3.58	15	0.65	313.72	313.35	314.89	314.66	322.17	323.93	3
1103-1104	32.50	0.040	0.040	0.85	0.03	0.03	5.0	5.00	7.20	0.24	6.26	2.16	15	0.94	317.90	317.60	318.10	317.77	322.17	322.17	4
1103-1105	30.60	0.830	0.830	0.65	0.54	0.54	5.0	5.00	7.20	3.89	5.00	3.27	15	0.60	314.00	313.82	315.12	315.04	316.75	322.17	5

Notes: IDF File = DurhamNC.idf, Return Period = 10-yrs.

Project File: Storm System 1100.sws

# Energy Grade Line Calculations

Project Name: Storm System 1100

Stormwater Studio 2021 v 3.0.0.25

07-19-2021

Line No	Line Size (in)	Q (cfs)	Downstream						Length (ft)	Upstream						Pipe		Junction				
			Invert Elev (ft)	Depth (ft)	Area (sqft)	HGL Elev (ft)	Vel (ft/s)	Vel Head (ft)		EGL Elev (ft)	Invert Elev (ft)	Depth (ft)	Area (sqft)	HGL Elev (ft)	Vel (ft/s)	Vel Head (ft)	EGL Elev (ft)	n Value	Energy Loss (ft)	HGLa Elev (ft)	EGLa Elev (ft)	Energy Loss (ft)
1	24	5.67	310.00	2.00	3.14	314.55	1.81	0.05	314.60	68.31	312.90	1.68	2.82	314.58	2.01	0.06	314.64	0.013	0.043	314.67	314.72	0.08
2	24	5.26	313.00	1.67	2.81	314.67	1.87	0.05	314.73	32.50	313.25	1.42	2.39	314.67	2.20	0.08	314.75	0.013	0.020	314.80	314.86	0.11
3	15	4.33	313.35	1.25	1.23	314.66	3.53	0.19	314.86	55.29	313.72	1.17	1.19	314.89	3.63	0.20	315.09	0.013	0.231	315.00	315.20	0.11
4	15	0.24	317.60	0.17‡	0.10	317.77	2.36	0.09	317.85	32.50	317.90	0.20 <sup>2</sup>	0.12	318.10	1.96	0.06	318.16	0.013	0.305	318.11	318.17	0.01
5	15	3.89	313.82	1.22	1.22	315.04	3.18	0.16	315.20	30.60	314.00	1.12	1.16	315.12	3.35	0.17	315.29	0.013	0.098	315.17	315.33	0.03

Notes: Return Period = 10-yrs. <sup>2</sup> Critical depth. ‡ Supercritical.

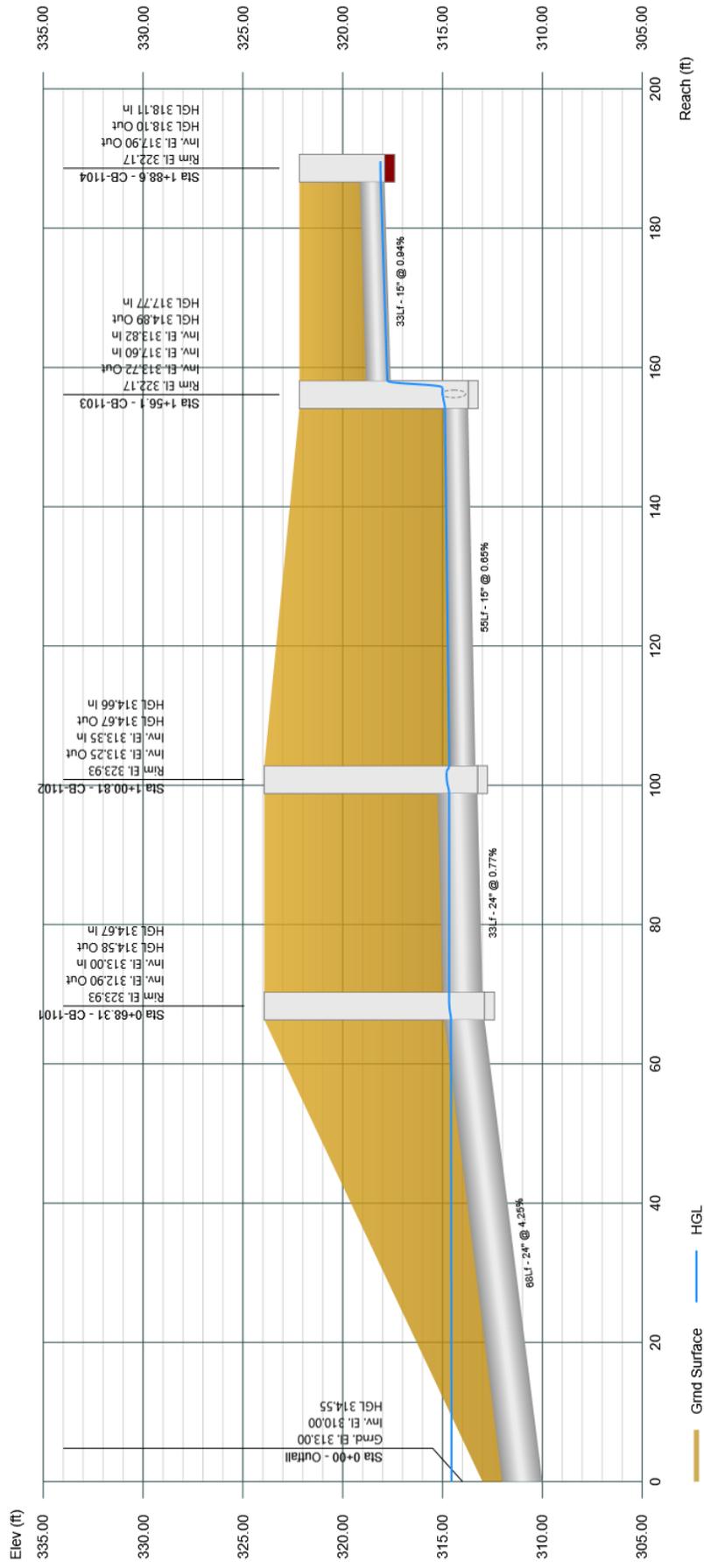
Project File: Storm System 1100.sws

# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 1100

07-19-2021

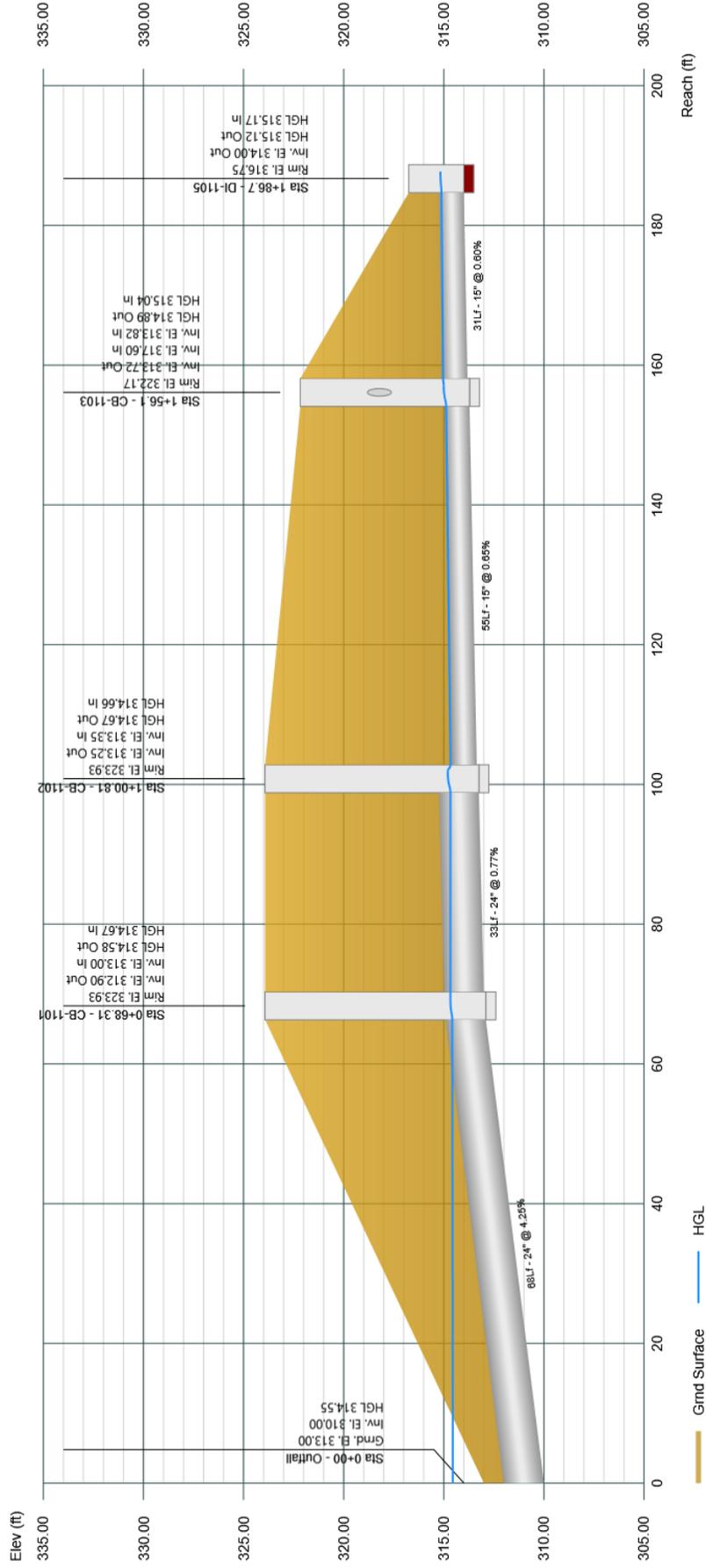


# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 1100

07-19-2021



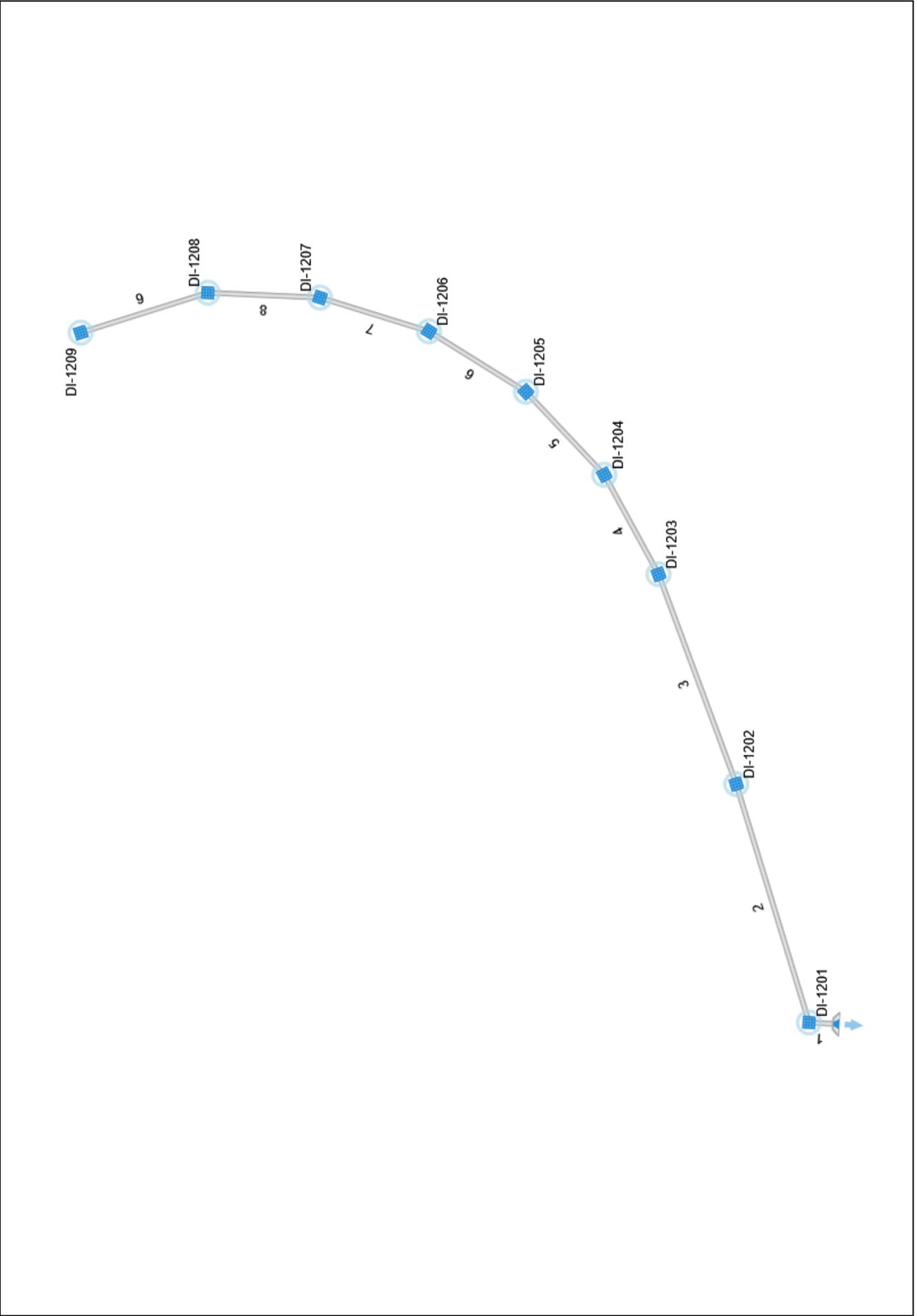
*SYSTEM 1200 – REPORTS AND PROFILES*

# Plan View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 1200

07-20-2021



# Storm Sewer Tabulation

Project Name: Storm System 1200

Stormwater Studio 2021 v 3.0.0.25

07-20-2021

Line ID	Length (ft)	Drng Area (ac)		Rational (C)	C x A		Tc (min)		Intensity (in/hr)	Total Q (cfs)	Capacity (cfs)	Velocity (ft/s)	Line		Invert Elev (ft)		HGL Elev (ft)		Surface Elev (ft)		Line No
		Incr	Total		Incr	Total	Inlet	Syst					Size (in)	Slope (%)	Up	Dn	Up	Dn	Up	Dn	
1200-1201	16.17	0.410	2.760	0.65	0.27	1.79	5.0	7.16	6.54	11.73	128.87	2.40	319.60	318.00	322.01	322.00	333.43	320.00	333.43	320.00	1
1201-1202	170.82	0.630	2.350	0.65	0.41	1.53	5.0	6.78	6.64	10.14	26.56	6.48	329.05	326.70	330.18	327.60	336.31	333.43	336.31	333.43	2
1202-1203	153.35	0.170	1.720	0.65	0.11	1.12	5.0	6.30	6.78	7.58	8.48	5.43	330.60	329.60	331.71	330.71	334.63	336.31	334.63	336.31	3
1203-1204	77.66	0.170	1.550	0.65	0.11	1.01	5.0	6.05	6.85	6.90	8.39	4.77	331.20	330.70	332.24	331.99	334.88	334.63	334.88	334.63	4
1204-1205	78.22	0.170	1.380	0.65	0.11	0.90	5.0	5.82	6.92	6.21	9.19	4.65	331.90	331.30	332.85	332.52	335.58	334.88	335.58	334.88	5
1205-1206	78.23	0.170	1.210	0.65	0.11	0.79	5.0	5.63	6.98	5.49	13.27	4.40	333.25	332.00	334.14	333.14	336.73	335.58	336.73	335.58	6
1206-1207	78.23	0.170	1.040	0.65	0.11	0.68	5.0	5.45	7.04	4.76	8.48	5.93	334.80	333.45	335.67	334.16	338.30	336.73	338.30	336.73	7
1207-1208	76.93	0.160	0.870	0.65	0.10	0.57	5.0	5.27	7.10	4.01	9.60	5.86	336.60	334.90	337.40	335.50	339.96	338.30	339.96	338.30	8
1208-1209	91.28	0.710	0.710	0.65	0.46	0.46	5.0	5.00	7.19	3.32	6.92	3.84	337.75	336.70	338.48	337.68	341.00	339.96	341.00	339.96	9

Notes: IDF File = The Point IDF, Return Period = 10-yrs.

Project File: Storm System 1200.sws

# Energy Grade Line Calculations

Project Name: Storm System 1200  
07-20-2021

Stormwater Studio 2021 v 3.0.0.25

Line No	Line Size (in)	Q (cfs)	Downstream						Length (ft)	Upstream						Pipe		Junction				
			Invert Elev (ft)	Depth (ft)	Area (sqft)	HGL Elev (ft)	Vel (ft/s)	Vel Head (ft)		EGL Elev (ft)	Invert Elev (ft)	Depth (ft)	Area (sqft)	HGL Elev (ft)	Vel (ft/s)	Vel Head (ft)	EGL Elev (ft)	n Value	Energy Loss (ft)	HGLa Elev (ft)	EGLa Elev (ft)	Energy Loss (ft)
1	30	11.73	318.00	2.50	4.91	322.00	2.39	0.09	322.09	16.17	319.60	2.41	4.86	322.01	2.42	0.09	322.10	0.013	0.012	322.33	322.41	0.31
2	24	10.14	326.70	0.90 <sup>‡</sup>	1.37	327.60	7.41	0.85	328.31	170.82	329.05	1.13 <sup>²</sup>	1.83	330.18	5.55	0.48	330.66	0.013	2.355	330.38	330.86	0.20
3	18	7.58	329.60	1.11 <sup>³</sup>	1.40	330.71	5.43	0.46	331.17	153.35	330.60	1.10	1.40	331.71	5.43	0.46	332.17	0.013	1.000	331.82	332.28	0.11
4	18	6.90	330.70	1.29	1.61	331.99	4.28	0.29	332.27	77.66	331.20	1.04	1.31	332.24	5.25	0.43	332.67	0.013	0.399	332.49	332.78	0.11
5	18	6.21	331.30	1.22	1.54	332.52	4.04	0.25	332.77	78.22	331.90	0.95 <sup>²</sup>	1.18	332.85	5.26	0.43	333.28	0.013	0.508	333.12	333.37	0.09
6	18	5.49	332.00	1.14	1.44	333.14	3.80	0.22	333.37	78.23	333.25	0.89 <sup>²</sup>	1.10	334.14	5.00	0.39	334.53	0.013	1.165	334.42	334.64	0.11
7	15	4.76	333.45	0.71 <sup>‡</sup>	0.71	334.16	6.67	0.69	334.76	78.23	334.80	0.87 <sup>²</sup>	0.92	335.67	5.20	0.42	336.09	0.013	1.337	335.85	336.19	0.10
8	15	4.01	334.90	0.60 <sup>‡</sup>	0.58	335.50	6.90	0.74	336.19	76.93	336.60	0.80 <sup>²</sup>	0.83	337.40	4.83	0.36	337.77	0.013	1.580	337.65	337.84	0.08
9	15	3.32	336.70	0.98	1.03	337.68	3.22	0.16	337.84	91.28	337.75	0.73 <sup>²</sup>	0.74	338.48	4.46	0.31	338.79	0.013	0.948	338.69	338.85	0.06

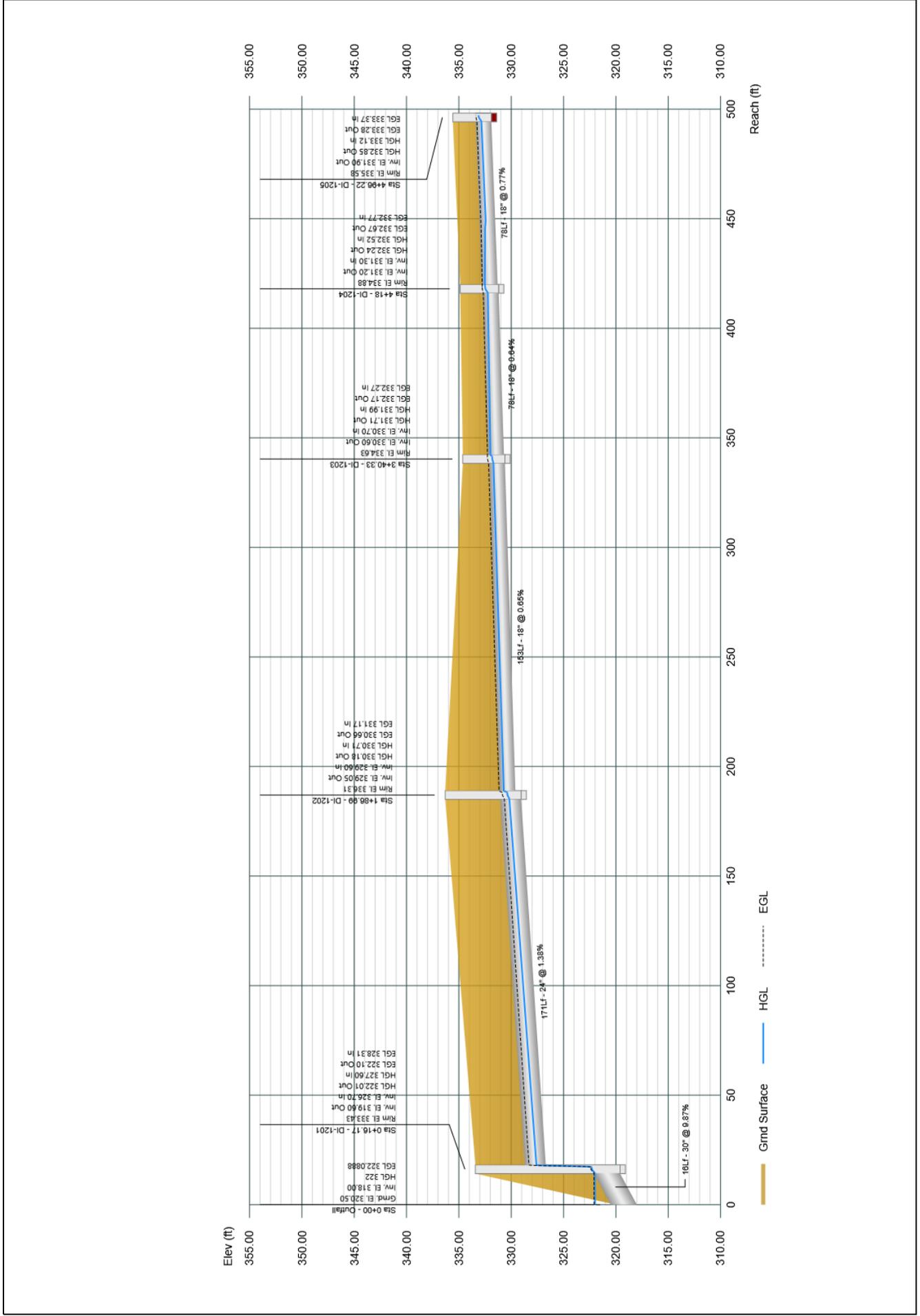
Notes: Return Period = 10-yrs. <sup>²</sup> Critical depth. <sup>³</sup> Normal depth. <sup>‡</sup> Supercritical.

# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 1200

07-20-2021

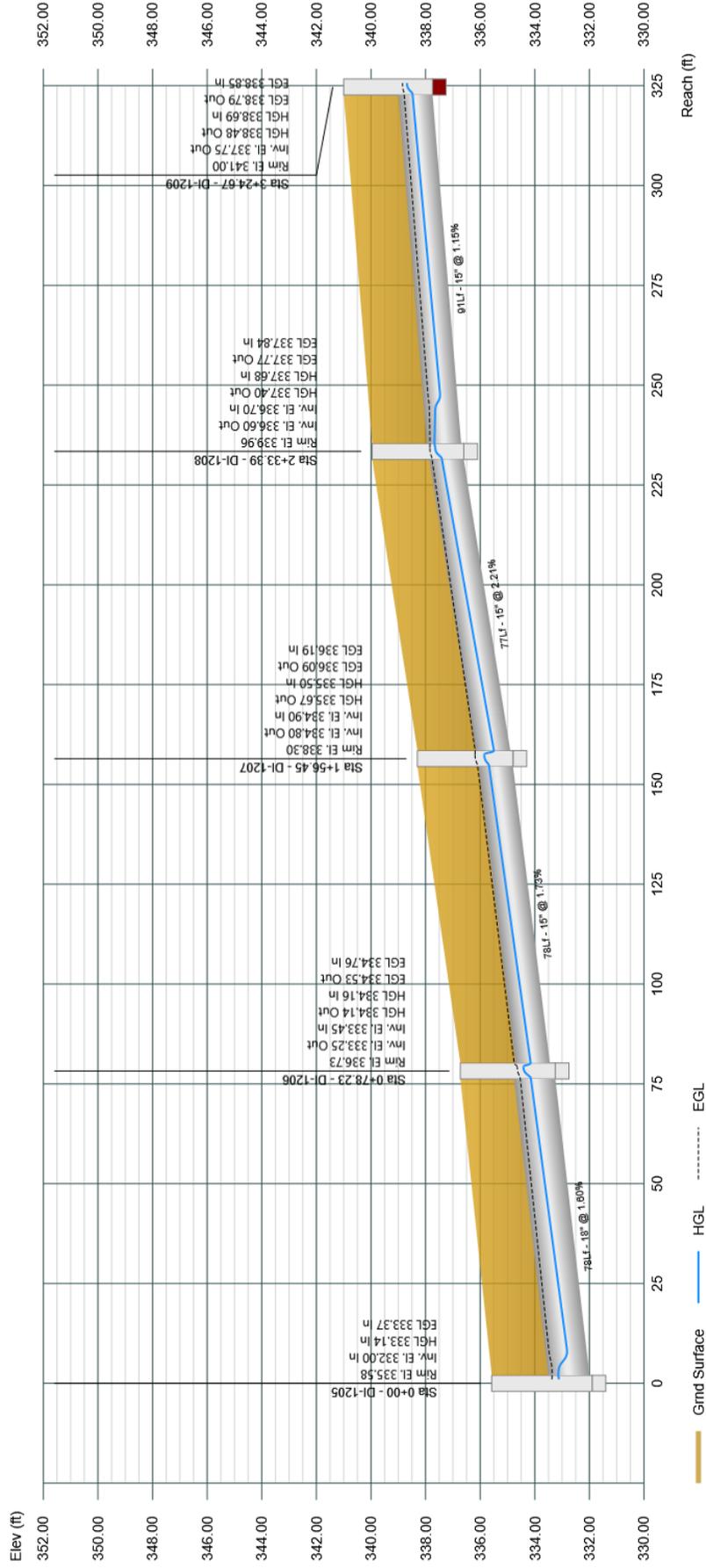


# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 1200

07-20-2021



*SYSTEM 1300 – REPORTS AND PROFILES*

# Storm Sewer Tabulation

Project Name: Storm System 1300

Stormwater Studio 2021 v 3.0.0.25

07-20-2021

Line ID	Length (ft)	Drng Area		Rational	C x A		Tc		Intensity (in/hr)	Total Q (cfs)	Capacity (cfs)	Velocity (ft/s)	Line		Invert Elev		HGL Elev		Surface Elev		Line No
		Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Incr	Total	Size (in)	Slope (%)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	
1300-1301	57.44	0.440	0.440	0.70	0.31	0.31	5.0	5.00	7.19	2.21	20.17	2.82	15	9.76	317.10	311.50	317.70	314.55	329.20	313.00	1

Notes: IDF File = The Point IDF, Return Period = 10-yrs.

Project File: Storm System 1300.sws

# Energy Grade Line Calculations

Project Name: Storm System 1300

Stormwater Studio 2021 v 3.0.0.25

07-20-2021

Line No	Line Size (in)	Q (cfs)	Downstream							Length (ft)	Upstream							Pipe		Junction		
			Invert Elev (ft)	Depth (ft)	Area (sqft)	HGL Elev (ft)	Vel (ft/s)	Vel Head (ft)	EGL Elev (ft)		Invert Elev (ft)	Depth (ft)	Area (sqft)	HGL Elev (ft)	Vel (ft/s)	Vel Head (ft)	EGL Elev (ft)	n Value	Enrgy Loss (ft)	HGLa Elev (ft)	EGLa Elev (ft)	Enrgy Loss (ft)
1	15	2.21	311.50	1.25	1.23	314.55	1.80	0.05	314.60	57.44	317.10	0.60 <sup>2</sup>	0.58	317.70	3.84	0.23	317.93	0.013	3.329	317.92	317.97	0.04

Notes: Return Period = 10-yrs. <sup>2</sup> Critical depth.

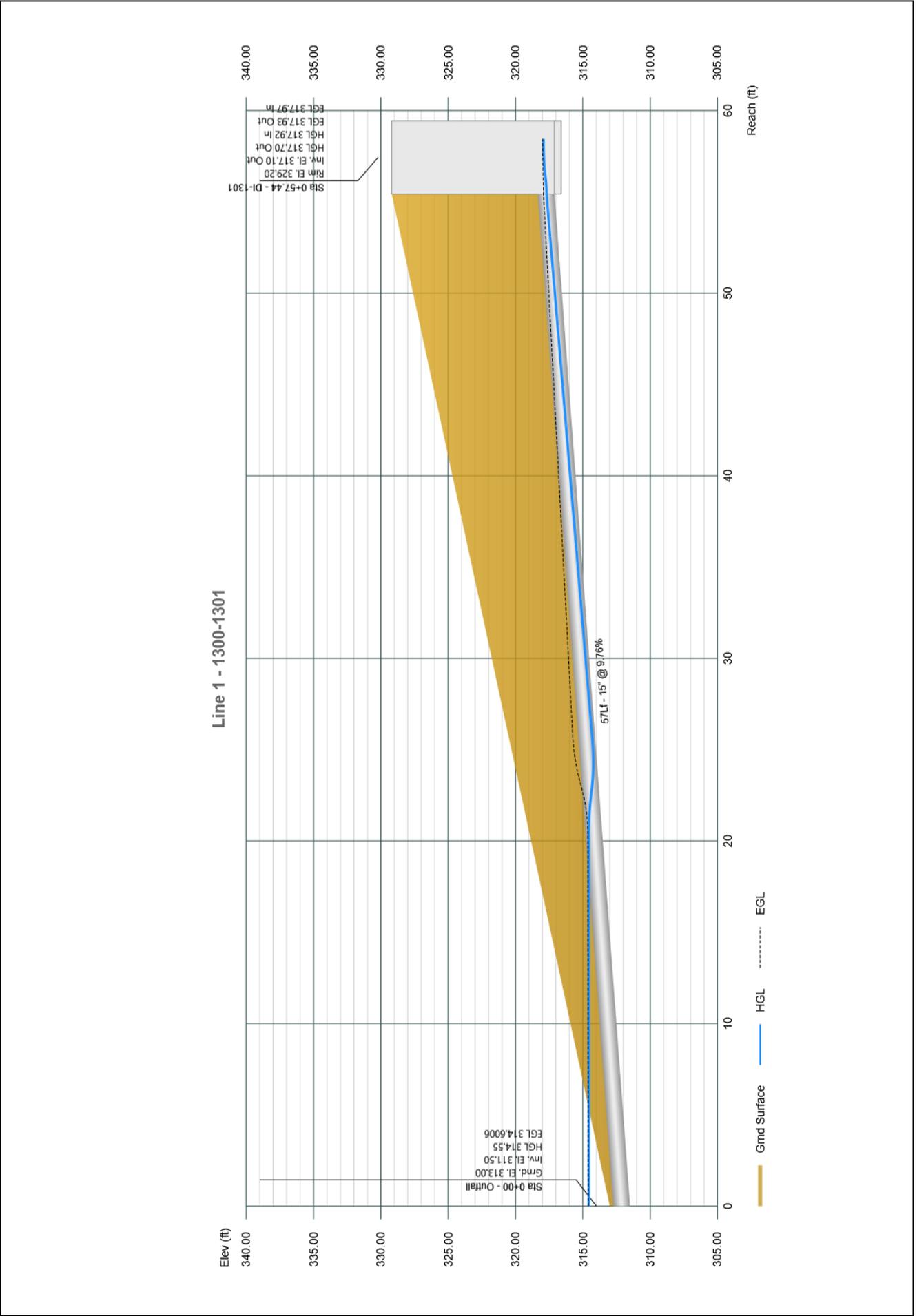
Project File: Storm System 1300.sws

# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 1300

07-20-2021



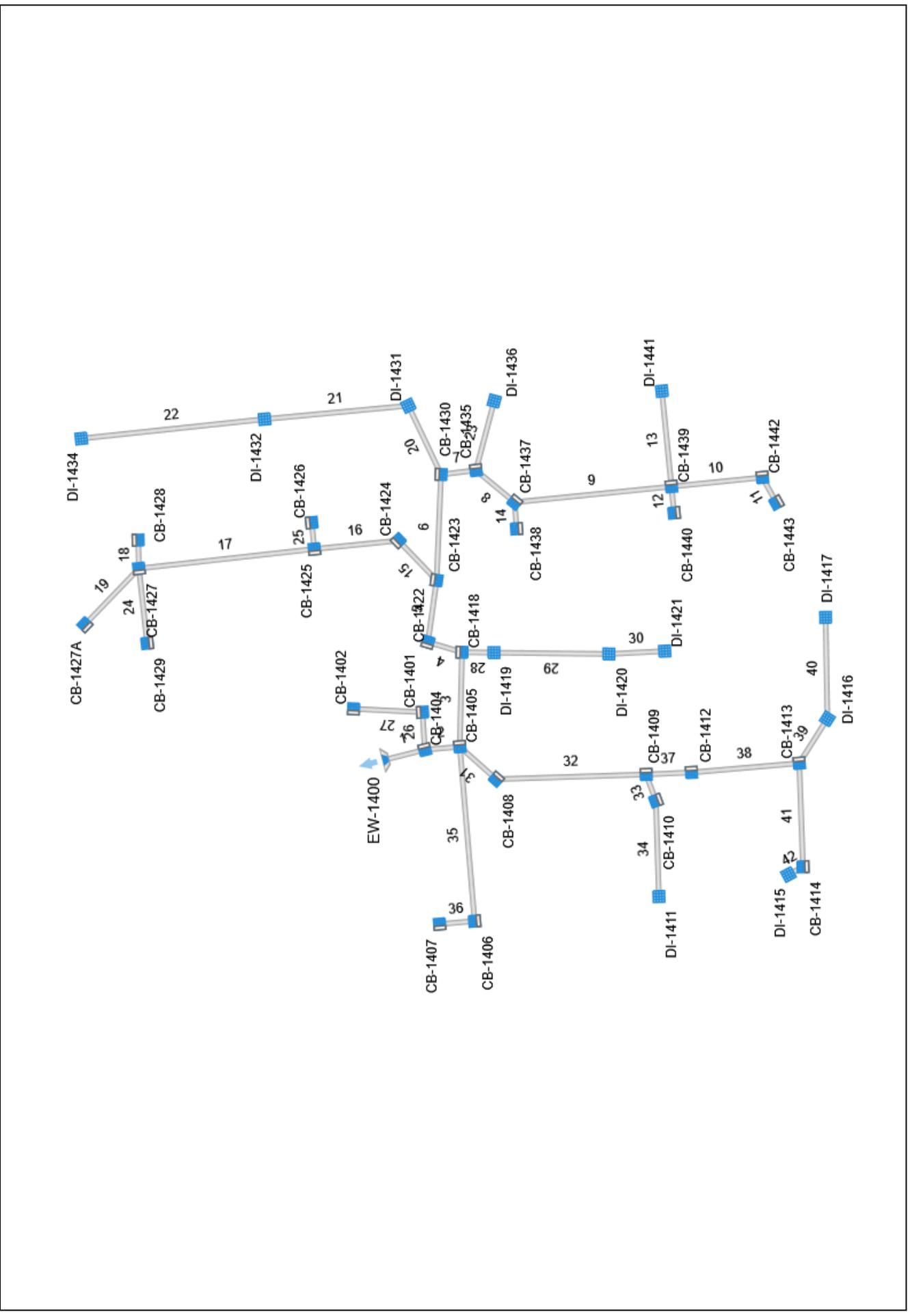
*SYSTEM 1400 – REPORTS AND PROFILES*

# Plan View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 1400

07-23-2021



# Storm Sewer Tabulation

Project Name: Storm System 1400  
07-23-2021

Stormwater Studio 2021 v 3.0.0.25

Line ID	Length (ft)	Drng Area		Rational	C x A		Tc		Intensity (in/hr)	Total Q (cfs)	Capacity (cfs)	Velocity (ft/s)	Line		Invert Elev		HGL Elev		Surface Elev		Line No
		Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	
1400-1404	34.26	0.020	9.990	0.85	0.02	6.21	5.0	7.23	6.52	40.49	199.98	2.15	60	0.59	375.35	379.83	379.83	385.87	377.20	1	
1404-1405	32.50	0.070	9.750	0.85	0.06	6.01	5.0	7.16	6.54	39.26	201.76	2.18	60	0.60	375.65	379.87	379.86	385.87	385.87	2	
1405-1418	87.46	0.230	5.840	0.75	0.17	3.90	5.0	6.96	6.59	25.73	34.10	7.33	30	0.69	379.00	380.70	380.07	386.91	385.87	3	
1418-1422	32.88	0.070	5.000	0.70	0.05	3.34	5.0	6.88	6.61	22.05	31.77	6.80	30	0.60	379.70	381.28	381.07	386.96	386.91	4	
1422-1423	57.73	0.030	4.930	0.90	0.03	3.29	5.0	6.74	6.65	21.86	31.77	6.77	30	0.60	380.25	381.82	381.46	387.62	386.96	5	
1423-1430	98.01	0.100	3.660	0.85	0.09	2.32	5.0	6.52	6.72	15.55	38.15	4.74	30	0.87	381.20	382.51	382.43	388.77	387.62	6	
1430-1435	32.51	0.100	2.500	0.85	0.09	1.59	5.0	6.21	6.81	10.85	25.25	6.12	24	1.25	382.50	383.67	383.14	388.78	388.77	7	
1435-1437	46.53	0.220	2.030	0.80	0.18	1.32	5.0	6.08	6.84	9.06	9.73	6.23	18	0.86	383.35	384.50	384.10	388.46	388.78	8	
1437-1439	145.81	0.120	1.590	0.80	0.10	0.97	5.0	5.62	6.99	6.79	8.23	5.20	18	0.61	385.10	386.14	385.24	390.04	388.46	9	
1439-1442	84.60	0.070	1.130	0.80	0.06	0.10	5.0	5.20	7.12	0.74	6.07	2.98	15	0.88	386.55	386.89	386.10	390.96	390.04	10	
1442-1443	26.70	0.060	0.060	0.80	0.05	0.05	5.0	5.00	7.19	0.34	4.84	2.23	15	0.56	386.80	387.04	386.87	391.07	390.96	11	
1439-1440	24.50	0.140	0.140	0.80	0.11	0.11	5.0	5.00	7.19	0.80	5.00	0.88	15	0.60	385.80	386.61	386.60	390.04	390.04	12	
1439-1441	88.76	1.200	1.200	0.55	0.66	0.66	5.0	5.00	7.19	4.74	5.10	3.94	15	0.62	385.75	386.90	386.47	388.50	390.04	13	
1437-1438	24.51	0.220	0.220	0.80	0.18	0.18	5.0	5.00	7.19	1.26	5.00	1.16	15	0.60	384.20	384.05	385.17	388.45	388.46	14	
1423-1424	50.99	0.040	1.240	0.90	0.04	0.94	5.0	6.29	6.78	6.40	34.27	1.53	30	0.70	380.70	382.54	382.54	387.26	387.62	15	
1424-1425	78.20	0.310	1.200	0.75	0.23	0.91	5.0	6.04	6.86	6.23	18.07	2.57	24	0.64	381.30	382.56	382.54	386.63	387.26	16	
1425-1427	163.36	0.030	0.450	0.90	0.03	0.37	5.0	5.39	7.06	2.59	5.18	4.12	15	0.64	382.45	383.10	382.03	388.35	386.63	17	
1427-1428	26.27	0.130	0.130	0.75	0.10	0.10	5.0	5.00	7.19	0.70	5.60	2.79	15	0.75	384.05	383.85	384.16	388.32	388.35	18	
1427-1427A	72.20	0.180	0.180	0.80	0.14	0.14	5.0	5.00	7.19	1.03	5.12	3.11	15	0.63	384.00	383.55	383.93	388.27	388.35	19	
1430-1431	70.47	0.090	1.060	0.60	0.05	0.64	5.0	6.27	6.79	4.32	8.42	2.96	18	0.64	382.05	383.06	383.00	387.35	388.77	20	
1431-1432	133.68	0.570	0.970	0.60	0.34	0.58	5.0	5.76	6.94	4.04	4.84	4.40	15	0.56	382.90	383.76	383.04	386.00	387.35	21	
1433-1434	170.65	0.400	0.400	0.60	0.24	0.24	5.0	5.00	7.19	1.72	5.07	2.48	15	0.62	384.05	384.58	384.17	387.05	386.00	22	

Notes: IDF File = The Point IDF, Return Period = 10-yrs. Project File: Storm System 1400.sws

# Storm Sewer Tabulation

Project Name: Storm System 1400  
07-23-2021

Stormwater Studio 2021 v 3.0.0.25

Line ID	Length (ft)	Drng Area		Rational	C x A		Tc		Intensity (in/hr)	Total Q (cfs)	Capacity (cfs)	Velocity (ft/s)	Line		Invert Elev		HGL Elev		Surface Elev		Line No
		Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	
1435-1436	66.27	0.370	0.370	0.50	0.19	0.19	5.0	5.00	7.19	1.33	5.00	3.30	15	0.60	383.75	383.35	384.22	383.80	386.50	388.78	23
1427-1429	69.55	0.110	0.110	0.90	0.10	0.10	5.0	5.00	7.19	0.71	5.18	1.45	15	0.64	383.00	382.55	383.41	383.37	387.28	388.35	24
1425-1426	24.50	0.440	0.440	0.70	0.31	0.31	5.0	5.00	7.19	2.21	5.79	3.99	15	0.80	382.35	382.15	382.95	382.72	386.63	386.63	25
1404-1401	34.79	0.050	0.220	0.90	0.05	0.19	5.0	5.33	7.08	1.34	6.50	3.53	15	1.01	380.90	380.55	381.37	380.96	386.26	385.87	26
1401-1402	63.87	0.170	0.170	0.85	0.14	0.14	5.0	5.00	7.19	1.04	5.11	3.10	15	0.63	381.40	381.00	381.81	381.39	385.65	386.26	27
1418-1419	29.55	0.160	0.610	0.65	0.10	0.40	5.0	5.76	6.94	2.75	33.50	0.60	30	0.67	379.40	379.20	381.52	381.52	384.50	386.91	28
1419-1420	106.40	0.260	0.450	0.65	0.17	0.29	5.0	5.28	7.09	2.07	17.66	0.83	24	0.61	380.25	379.60	381.52	381.52	383.50	384.50	29
1420-1421	51.78	0.190	0.190	0.65	0.12	0.12	5.0	5.00	7.19	0.89	4.92	0.84	15	0.58	380.65	380.35	381.54	381.54	383.50	383.50	30
1405-1408	45.18	0.060	3.470	0.80	0.05	1.74	5.0	6.39	6.75	11.75	146.60	0.78	54	0.56	376.00	375.75	379.94	379.94	385.50	385.87	31
1408-1409	138.81	0.120	3.410	0.80	0.10	1.69	5.0	5.96	6.88	11.64	105.80	1.03	48	0.54	376.85	376.10	379.95	379.94	384.94	385.50	32
1409-1410	25.85	0.130	0.510	0.80	0.10	0.29	5.0	5.40	7.05	2.07	5.61	3.51	15	0.76	379.45	379.25	380.02	379.89	384.82	384.94	33
1410-1411	88.75	0.380	0.380	0.50	0.19	0.19	5.0	5.00	7.19	1.37	2.93	3.58	12	0.68	380.30	379.70	380.80	380.18	383.29	384.82	34
1405-1406	161.88	0.260	0.370	0.80	0.21	0.30	5.0	5.19	7.12	2.15	4.65	2.46	15	0.52	379.50	378.65	380.17	379.92	384.04	385.87	35
1406-1407	32.50	0.110	0.110	0.85	0.09	0.09	5.0	5.00	7.19	0.67	5.13	1.02	15	0.63	379.80	379.60	380.38	380.38	384.04	384.04	36
1409-1412	42.02	0.060	2.780	0.80	0.05	1.30	5.0	5.83	6.92	9.01	51.65	1.30	36	0.60	377.20	376.95	379.96	379.95	384.36	384.94	37
1412-1413	100.11	0.630	2.720	0.50	0.32	1.25	5.0	5.53	7.01	8.80	17.52	2.80	24	0.60	377.90	377.30	380.07	379.92	383.12	384.36	38
1413-1416	48.60	0.210	1.330	0.35	0.07	0.52	5.0	5.36	7.07	3.69	8.93	2.42	18	0.72	379.10	378.75	380.18	380.16	381.97	383.12	39
1416-1417	93.85	1.120	1.120	0.40	0.45	0.45	5.0	5.00	7.19	3.22	4.96	4.40	15	0.59	379.75	379.20	380.47	379.91	382.50	381.97	40
1413-1414	95.90	0.470	0.760	0.55	0.26	0.42	5.0	5.07	7.16	2.99	4.88	2.44	15	0.57	378.55	378.00	380.35	380.15	382.51	383.12	41
1414-1415	15.31	0.290	0.290	0.55	0.16	0.16	5.0	5.00	7.19	1.15	5.27	0.93	15	0.67	378.75	378.65	380.46	380.46	381.50	382.51	42

Notes: IDF File = The Point IDF, Return Period = 10-yrs.

Project File: Storm System 1400.sws

# Energy Grade Line Calculations

Project Name: Storm System 1400  
07-23-2021

Stormwater Studio 2021 v 3.0.0.25

Line No	Line Size (in)	Q (cfs)	Downstream						Length (ft)	Upstream							Pipe		Junction		
			Invert Elev (ft)	Depth (ft)	Area (sqft)	HGL Elev (ft)	Vel (ft/s)	Vel Head (ft)		EGL Elev (ft)	Invert Elev (ft)	Depth (ft)	Area (sqft)	HGL Elev (ft)	Vel (ft/s)	Vel Head (ft)	EGL Elev (ft)	n Value	Energy Loss (ft)	HGLa Elev (ft)	EGLa Elev (ft)
1	60	40.49	375.15	4.68	19.11	379.83	2.12	0.07	379.90	34.26	4.48	18.56	379.83	2.18	0.07	379.91	0.013	0.006	379.83	379.91	0.00
2	60	39.26	375.45	4.41	18.34	379.86	2.14	0.07	379.94	32.50	4.22	17.69	379.87	2.22	0.08	379.94	0.013	0.009	379.87	379.95	0.00
3	30	25.73	378.40	1.67‡	3.47	380.07	7.41	0.85	380.91	87.46	1.70²	3.54	380.70	7.26	0.82	381.52	0.013	0.605	380.70	381.52	0.00
4	30	22.05	379.50	1.56‡	3.23	381.07	6.82	0.72	381.82	32.88	1.58	3.26	381.28	6.77	0.71	381.99	0.013	0.169	381.32	382.03	0.04
5	30	21.86	379.90	1.56‡	3.22	381.46	6.79	0.72	382.18	57.73	1.57	3.24	381.82	6.74	0.71	382.52	0.013	0.347	381.86	382.56	0.04
6	30	15.55	380.35	2.09	4.38	382.43	3.55	0.20	382.63	98.01	1.32²	2.62	382.51	5.93	0.55	383.06	0.013	0.429	382.51	383.06	0.00
7	24	10.85	382.10	1.04‡	1.66	383.14	6.54	0.66	383.77	32.51	1.17²	1.90	383.67	5.70	0.51	384.17	0.013	0.405	383.67	384.17	0.00
8	18	9.06	382.95	1.15‡	1.45	384.10	6.24	0.61	384.71	46.53	1.15	1.46	384.50	6.22	0.60	385.11	0.013	0.399	384.58	385.19	0.08
9	18	6.79	384.20	1.04³	1.31	385.24	5.20	0.42	385.66	145.81	1.04	1.31	386.14	5.19	0.42	386.56	0.013	0.895	386.19	386.61	0.05
10	15	0.74	385.80	0.30‡	0.23	386.10	3.26	0.17	386.62	84.60	0.34²	0.28	386.89	2.69	0.11	387.00	0.013	0.390	386.89	387.00	0.00
11	15	0.34	386.65	0.22‡	0.15	386.87	2.34	0.09	387.01	26.70	0.24	0.16	387.04	2.12	0.07	387.11	0.013	0.098	387.08	387.15	0.04
12	15	0.80	385.65	0.95	1.00	386.60	0.80	0.01	386.62	24.50	0.81	0.84	386.61	0.96	0.01	386.62	0.013	0.006	386.61	386.63	0.01
13	15	4.74	385.20	1.25	1.23	386.47	3.87	0.23	386.70	88.76	1.15	1.18	386.90	4.01	0.25	387.15	0.013	0.447	386.96	387.21	0.06
14	15	1.26	384.05	1.12	1.16	385.17	1.09	0.02	385.19	24.51	0.98	1.03	385.18	1.23	0.02	385.20	0.013	0.010	385.19	385.21	0.01
15	30	6.40	380.35	2.20	4.57	382.54	1.40	0.03	382.57	50.99	1.84	3.87	382.54	1.65	0.04	382.58	0.013	0.011	382.54	382.59	0.00
16	24	6.23	380.80	1.74	2.90	382.54	2.15	0.07	382.61	78.20	1.26	2.08	382.56	3.00	0.14	382.70	0.013	0.085	382.58	382.72	0.02
17	15	2.59	381.40	0.63‡	0.62	382.03	4.20	0.27	382.74	163.36	0.65	0.64	383.10	4.04	0.25	383.35	0.013	0.610	383.13	383.38	0.03
18	15	0.70	383.85	0.31‡	0.24	384.16	2.94	0.13	384.30	26.27	0.34²	0.26	384.39	2.65	0.11	384.49	0.013	0.198	384.39	384.49	0.00
19	15	1.03	383.55	0.38‡	0.32	383.93	3.23	0.16	384.09	72.20	0.41²	0.35	384.41	2.98	0.14	384.55	0.013	0.453	384.41	384.55	0.00
20	18	4.32	381.60	1.40	1.72	383.00	2.51	0.10	383.10	70.47	1.01	1.27	383.06	3.40	0.18	383.24	0.013	0.145	383.07	383.25	0.01
21	15	4.04	382.15	0.89	0.93	383.04	4.33	0.29	383.33	133.68	0.86	0.90	383.76	4.47	0.31	384.07	0.013	0.746	383.88	384.19	0.12
22	15	1.72	383.00	1.17	1.20	384.17	1.44	0.03	384.21	170.65	0.53²	0.49	384.58	3.52	0.19	384.77	0.013	0.567	384.58	384.77	0.00

Notes: Return Period = 10-yrs. ² Critical depth. ³ Normal depth. ‡ Supercritical. Project File: Storm System 1400.sws

# Energy Grade Line Calculations

Project Name: Storm System 1400  
07-23-2021

Stormwater Studio 2021 v 3.0.0.25

Line No	Line Size (in)	Q (cfs)	Downstream						Length (ft)	Upstream						Pipe		Junction				
			Invert Elev (ft)	Depth (ft)	Area (sqft)	HGL Elev (ft)	Vel (ft/s)	Vel Head (ft)		EGL Elev (ft)	Invert Elev (ft)	Depth (ft)	Area (sqft)	HGL Elev (ft)	Vel (ft/s)	Vel Head (ft)	EGL Elev (ft)	n Value	Energy Loss (ft)	HGLa Elev (ft)	EGLa Elev (ft)	Energy Loss (ft)
23	15	1.33	383.35	0.44†	0.39	383.80	3.42	0.18	384.19	66.27	383.75	0.47	0.42	384.22	3.17	0.16	384.37	0.013	0.186	384.27	384.43	0.06
24	15	0.71	382.55	0.82	0.85	383.37	0.83	0.01	383.38	69.55	383.00	0.41	0.35	383.41	2.06	0.07	383.47	0.013	0.089	383.45	383.51	0.04
25	15	2.21	382.15	0.56†	0.54	382.72	4.14	0.27	382.98	24.50	382.35	0.60²	0.58	382.95	3.84	0.23	383.17	0.013	0.197	382.95	383.17	0.00
26	15	1.34	380.55	0.41†	0.35	380.96	3.83	0.23	381.18	34.79	380.90	0.46²	0.41	381.37	3.24	0.16	381.53	0.013	0.352	381.37	381.53	0.00
27	15	1.04	381.00	0.39†	0.32	381.39	3.21	0.16	381.55	63.87	381.40	0.41²	0.35	381.81	2.99	0.14	381.95	0.013	0.398	381.81	381.95	0.00
28	30	2.75	379.20	2.31	4.74	381.52	0.58	0.01	381.52	29.55	379.40	2.12	4.43	381.52	0.62	0.01	381.52	0.013	0.002	381.52	381.52	0.00
29	24	2.07	379.60	1.92	3.10	381.52	0.67	0.01	381.53	106.40	380.25	1.27	2.11	381.52	0.98	0.01	381.54	0.013	0.013	381.53	381.54	0.00
30	15	0.89	380.35	1.19	1.20	381.54	0.74	0.01	381.54	51.78	380.65	0.89	0.94	381.54	0.95	0.01	381.56	0.013	0.012	381.55	381.56	0.00
31	54	11.75	375.75	4.20	15.44	379.94	0.76	0.01	379.95	45.18	376.00	3.94	14.77	379.94	0.80	0.01	379.95	0.013	-0.001	379.94	379.95	0.00
32	48	11.64	376.10	3.85	12.41	379.94	0.94	0.01	379.96	138.81	376.85	3.10	10.45	379.95	1.11	0.02	379.97	0.013	0.012	379.95	379.97	0.00
33	15	2.07	379.25	0.64	0.63	379.89	3.27	0.17	380.06	25.85	379.45	0.58²	0.55	380.02	3.75	0.22	380.24	0.013	0.183	380.02	380.24	0.00
34	12	1.37	379.70	0.48†	0.37	380.18	3.64	0.21	380.39	88.75	380.30	0.50²	0.39	380.80	3.52	0.19	380.99	0.013	0.603	380.80	380.99	0.00
35	15	2.15	378.65	1.25	1.23	379.92	1.75	0.05	379.97	161.88	379.50	0.68	0.68	380.17	3.17	0.16	380.33	0.013	0.361	380.23	380.38	0.06
36	15	0.67	379.60	0.78	0.81	380.38	0.83	0.01	380.39	32.50	379.80	0.58	0.56	380.38	1.21	0.02	380.40	0.013	0.012	380.39	380.41	0.01
37	36	9.01	376.95	3.00	7.07	379.95	1.28	0.03	379.98	42.02	377.20	2.76	6.80	379.96	1.33	0.03	379.99	0.013	0.008	379.96	379.99	0.00
38	24	8.80	377.30	2.00	3.14	379.92	2.80	0.12	380.04	100.11	377.90	2.00	3.14	380.07	2.80	0.12	380.19	0.013	0.151	380.08	380.20	0.01
39	18	3.69	378.75	1.41	1.72	380.16	2.14	0.07	380.23	48.60	379.10	1.08	1.37	380.18	2.69	0.11	380.29	0.013	0.066	380.19	380.30	0.01
40	15	3.22	379.20	0.72†	0.73	379.91	4.41	0.30	380.34	93.85	379.75	0.72	0.73	380.47	4.39	0.30	380.77	0.013	0.426	380.60	380.90	0.13
41	15	2.99	378.00	1.25	1.23	380.15	2.44	0.09	380.24	95.90	378.55	1.25	1.23	380.35	2.44	0.09	380.45	0.013	0.206	380.37	380.47	0.02
42	15	1.15	378.65	1.25	1.23	380.46	0.93	0.01	380.47	15.31	378.75	1.25	1.23	380.46	0.93	0.01	380.48	0.013	0.005	380.47	380.48	0.00

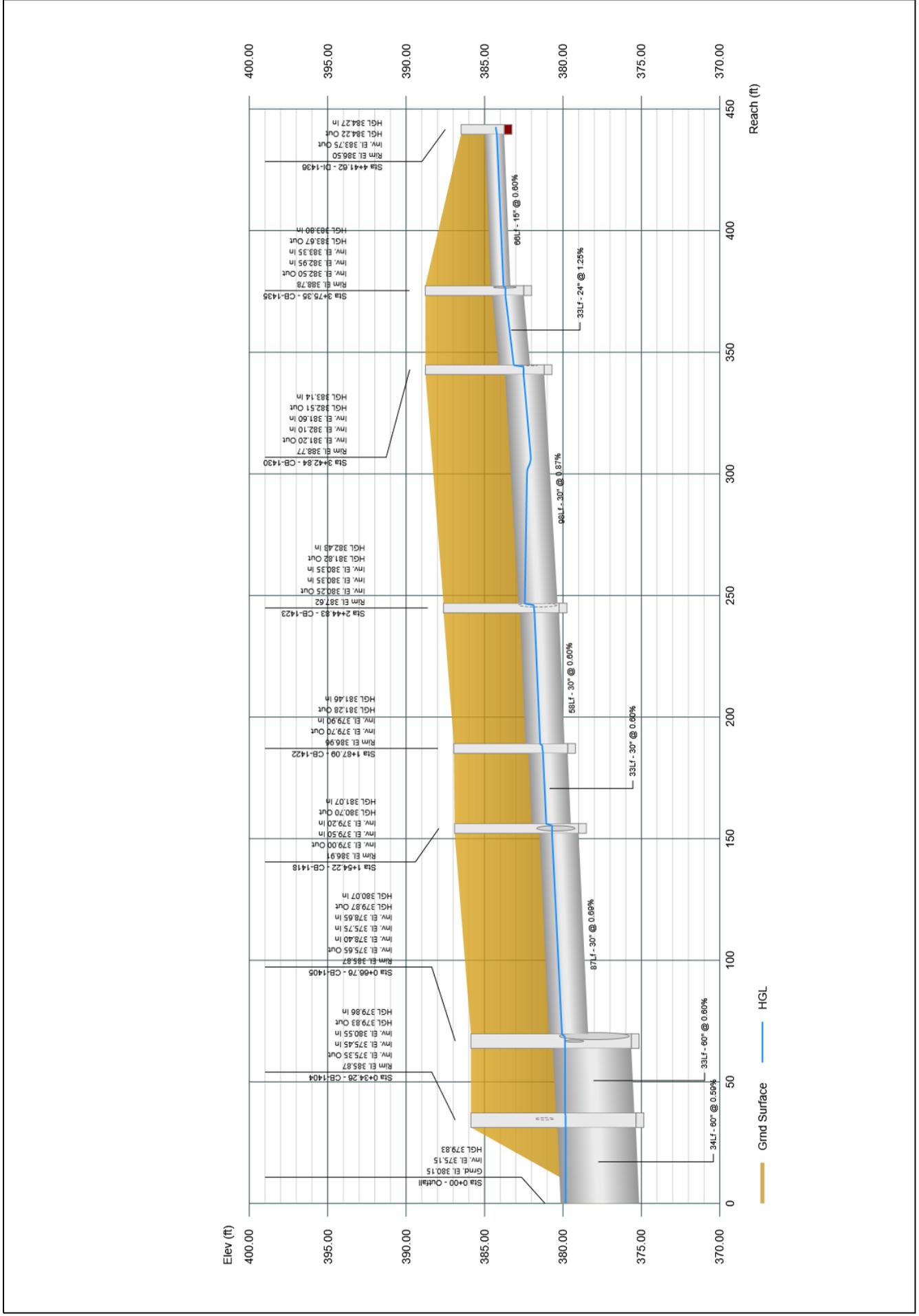
Notes: Return Period = 10-yrs. ² Critical depth. † Supercritical.

# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 1400

07-23-2021

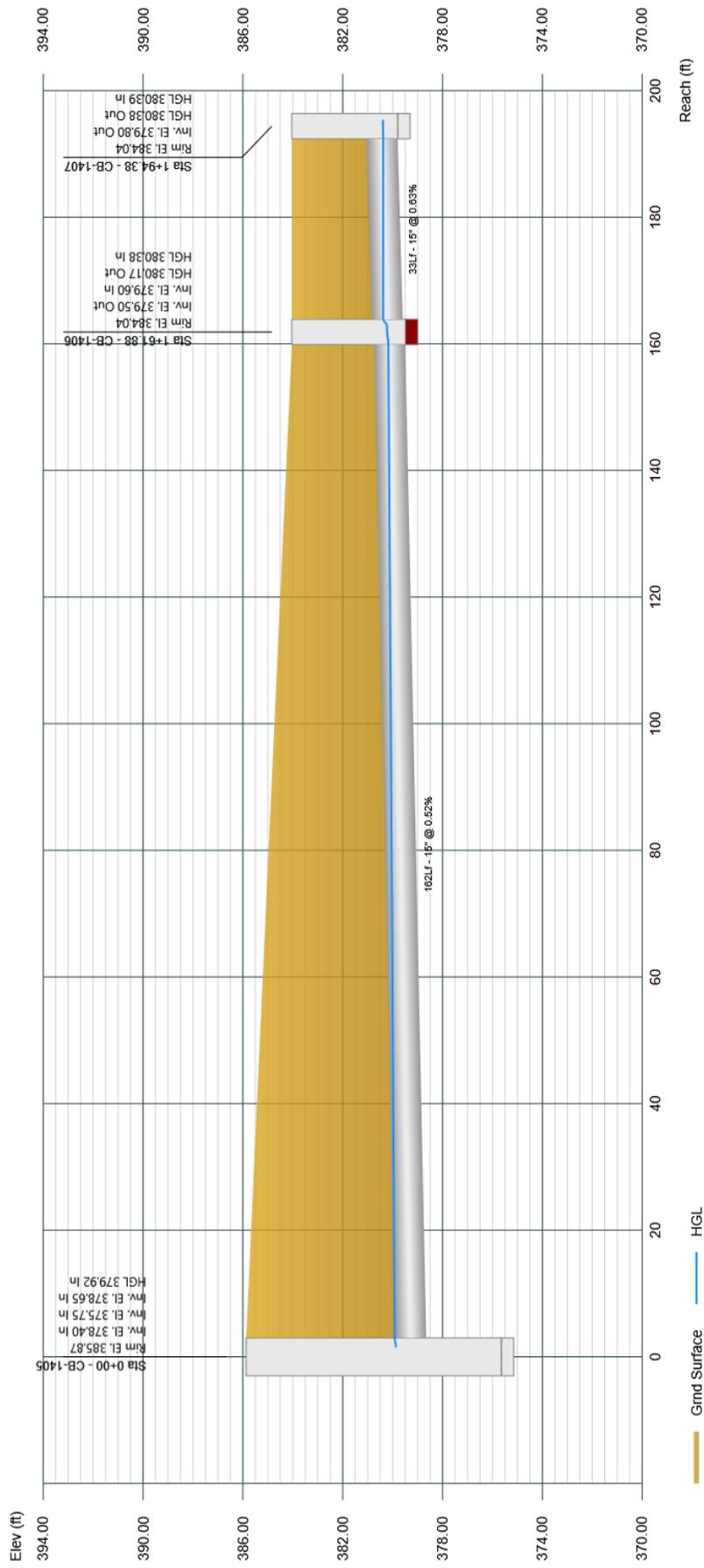


# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 1400

07-23-2021

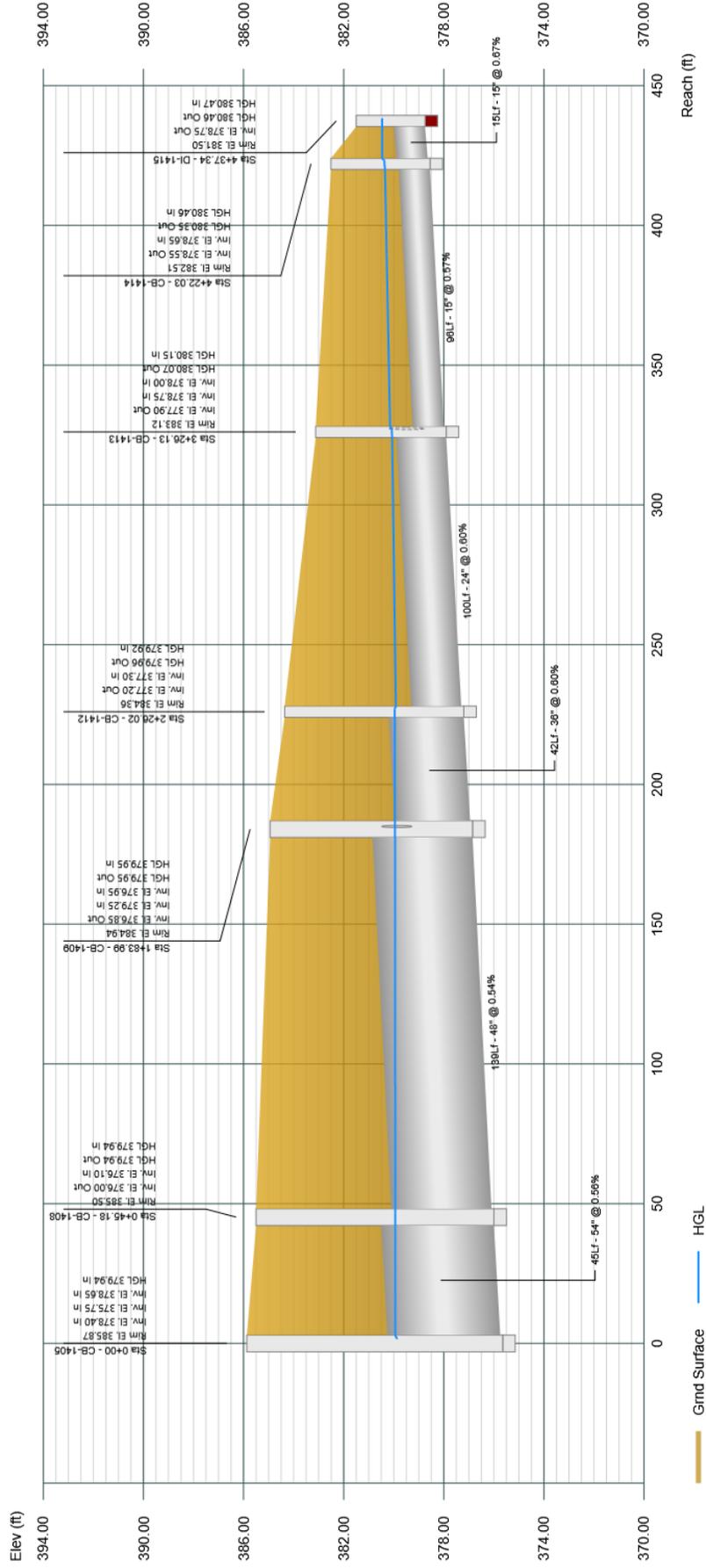


# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 1400

07-23-2021

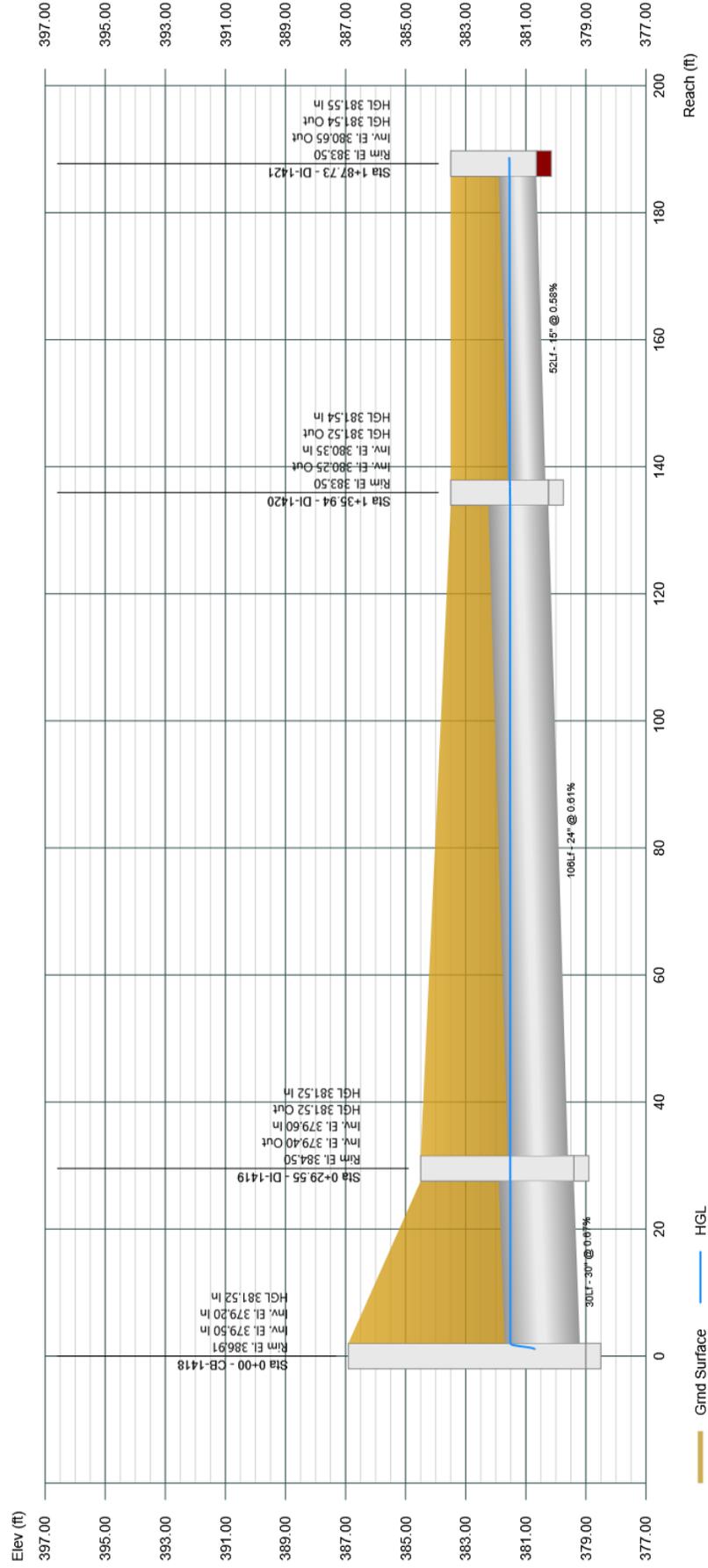


# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 1400

07-23-2021

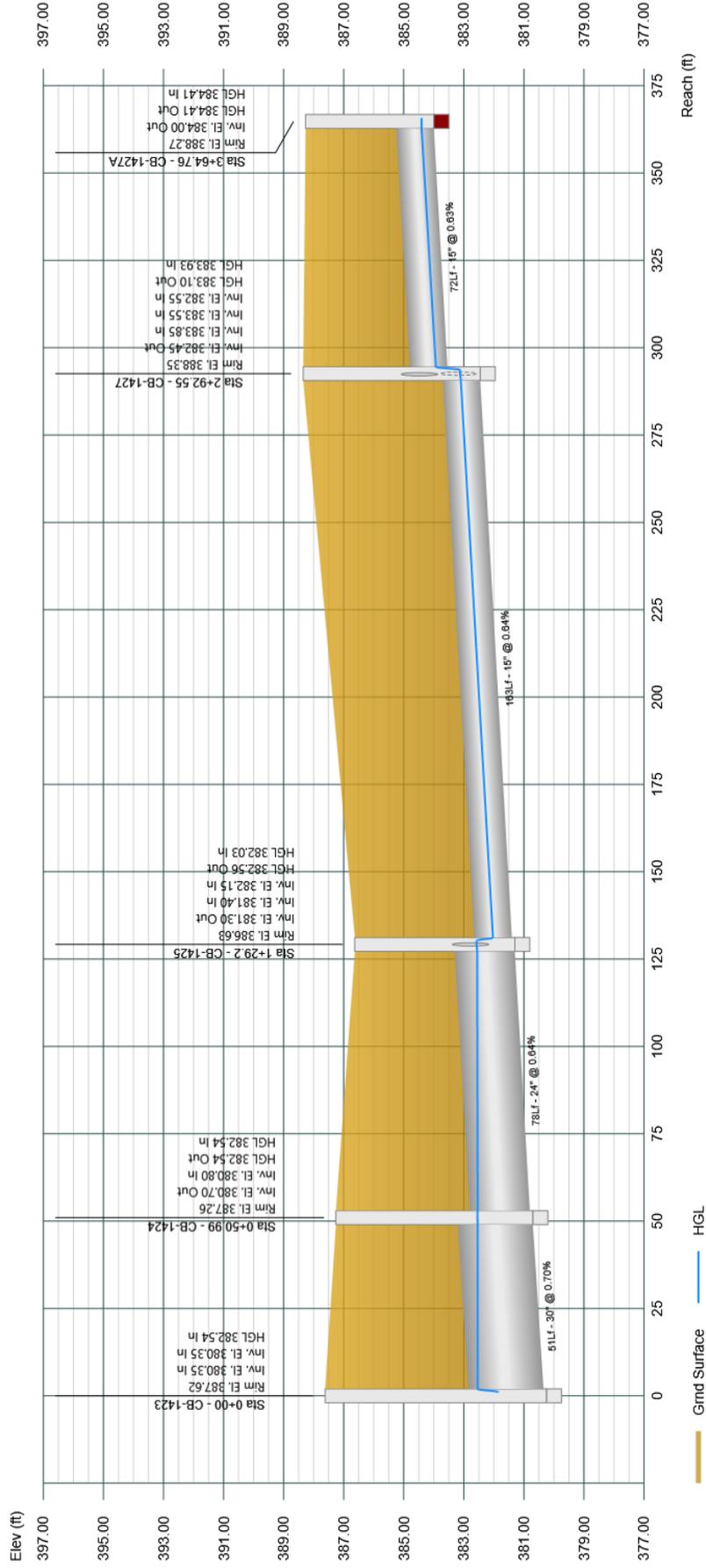


# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 1400

07-23-2021

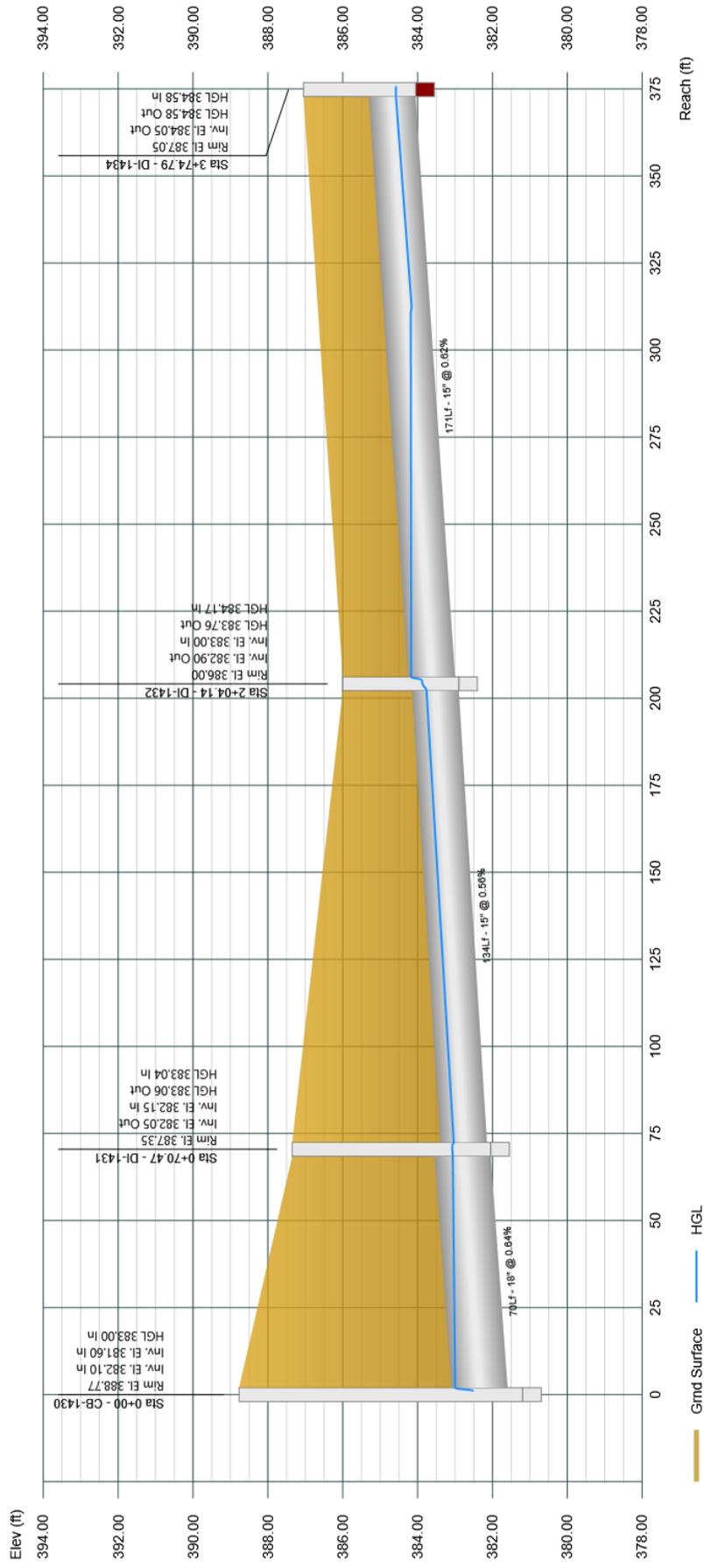


# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 1400

07-23-2021

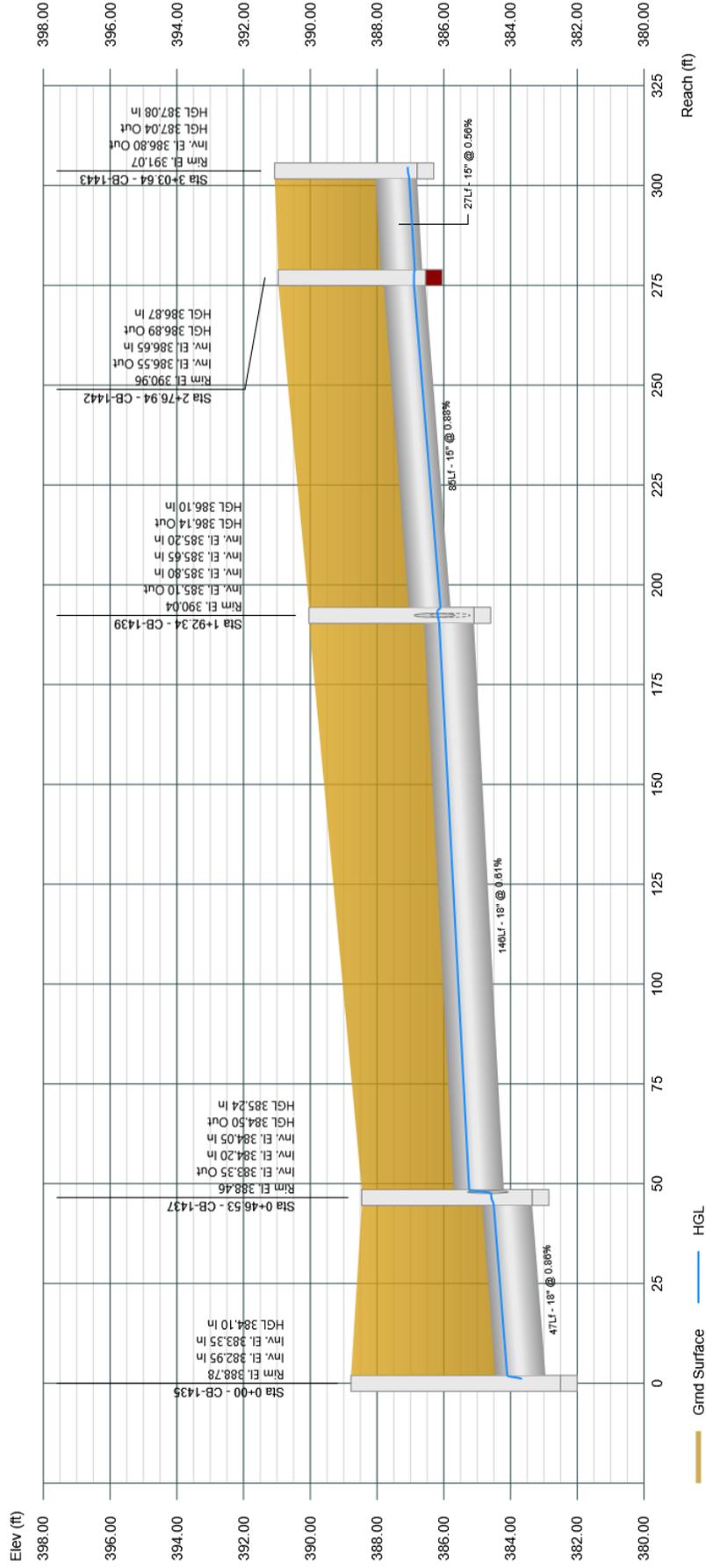


# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 1400

07-23-2021



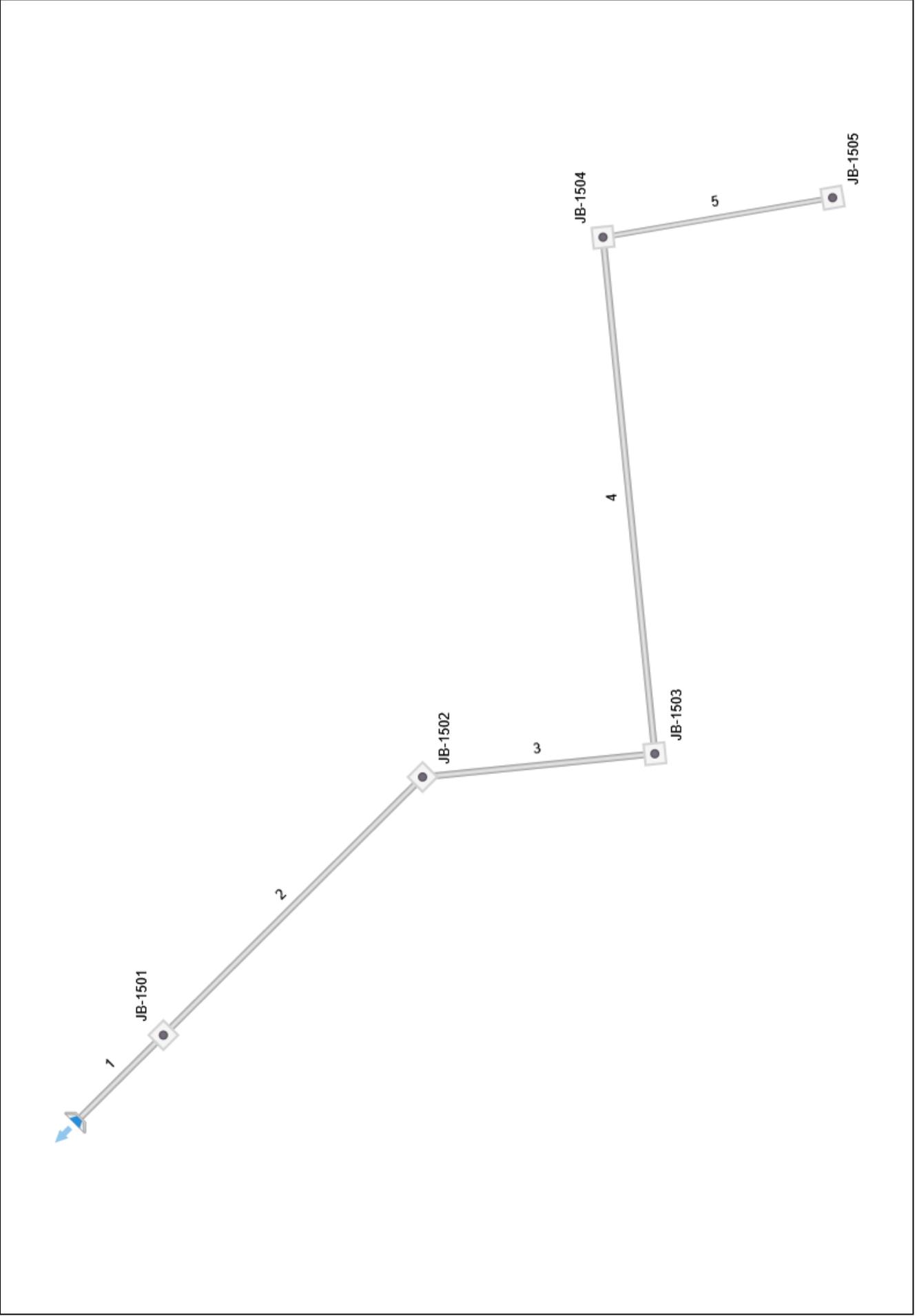
*SYSTEM 1500 – REPORTS AND PROFILES*

# Plan View

Project Name: Storm System 1500

Stormwater Studio 2021 v 3.0.0.25

07-19-2021



# Storm Sewer Tabulation

Project Name: Storm System 1500

Stormwater Studio 2021 v 3.0.0.25

07-19-2021

Line ID	Length (ft)	Drng Area (ac)		Rational (C)	C x A		Tc (min)		Intensity (in/hr)	Total Q (cfs)	Capacity (cfs)	Velocity (ft/s)	Line		Invert Elev (ft)		HGL Elev (ft)		Surface Elev (ft)		Line No
		Incr	Total		Incr	Total	Inlet	Syst					Incr	Total	Incr	Total	Incr	Total	Incr	Total	
1500-1501	33.48	0.000	0.000	0.00	0.00	0.00	0.0	1.12	0.00	9.10	17.52	5.36	24	0.60	380.70	380.50	381.77	381.55	388.83	385.00	1
1501-1502	105.11	0.000	0.000	0.00	0.00	0.00	0.0	0.81	0.00	9.10	17.09	5.39	24	0.57	381.40	380.80	382.47	381.85	388.54	388.83	2
1502-1503	67.07	0.000	0.000	0.00	0.00	0.00	0.0	0.61	0.00	9.10	17.47	5.39	24	0.60	381.90	381.50	382.97	382.54	387.66	388.54	3
1503-1504	149.18	0.000	0.000	0.00	0.00	0.00	0.0	0.17	0.00	9.10	18.05	5.49	24	0.64	382.95	382.00	384.02	383.02	388.00	387.66	4
1504-1505	66.93	0.000	0.000	0.00	0.00	0.00	0.0	0.00	0.00	9.10	9.96	6.29	18	0.90	383.90	383.30	385.05	384.44	389.80	388.00	5

# Energy Grade Line Calculations

Project Name: Storm System 1500

Stormwater Studio 2021 v 3.0.0.25

07-19-2021

Line No	Line Size (in)	Q (cfs)	Downstream						Length (ft)	Upstream						Pipe		Junction				
			Invert Elev (ft)	Depth (ft)	Area (sqft)	HGL Elev (ft)	Vel (ft/s)	Vel Head (ft)		EGL Elev (ft)	Invert Elev (ft)	Depth (ft)	Area (sqft)	HGL Elev (ft)	Vel (ft/s)	Vel Head (ft)	EGL Elev (ft)	n Value	Energy Loss (ft)	HGLa Elev (ft)	EGLa Elev (ft)	Energy Loss (ft)
1	24	9.10	380.50	1.05‡	1.68	381.55	5.42	0.46	382.01	33.48	380.70	1.07	1.72	381.77	5.30	0.44	382.21	0.013	0.201	381.91	382.36	0.15
2	24	9.10	380.80	1.05‡	1.67	381.85	5.45	0.46	382.35	105.11	381.40	1.07 <sup>2</sup>	1.71	382.47	5.33	0.44	382.91	0.013	0.564	382.83	383.14	0.23
3	24	9.10	381.50	1.04‡	1.66	382.54	5.48	0.47	383.13	67.07	381.90	1.07	1.72	382.97	5.30	0.44	383.41	0.013	0.279	383.46	383.70	0.29
4	24	9.10	382.00	1.02‡	1.61	383.02	5.65	0.50	383.69	149.18	382.95	1.07 <sup>2</sup>	1.71	384.02	5.33	0.44	384.46	0.013	0.769	384.63	384.83	0.37
5	18	9.10	383.30	1.14‡	1.44	384.44	6.32	0.62	385.10	66.93	383.90	1.15 <sup>2</sup>	1.46	385.05	6.25	0.61	385.66	0.013	0.562	385.28	385.75	0.09

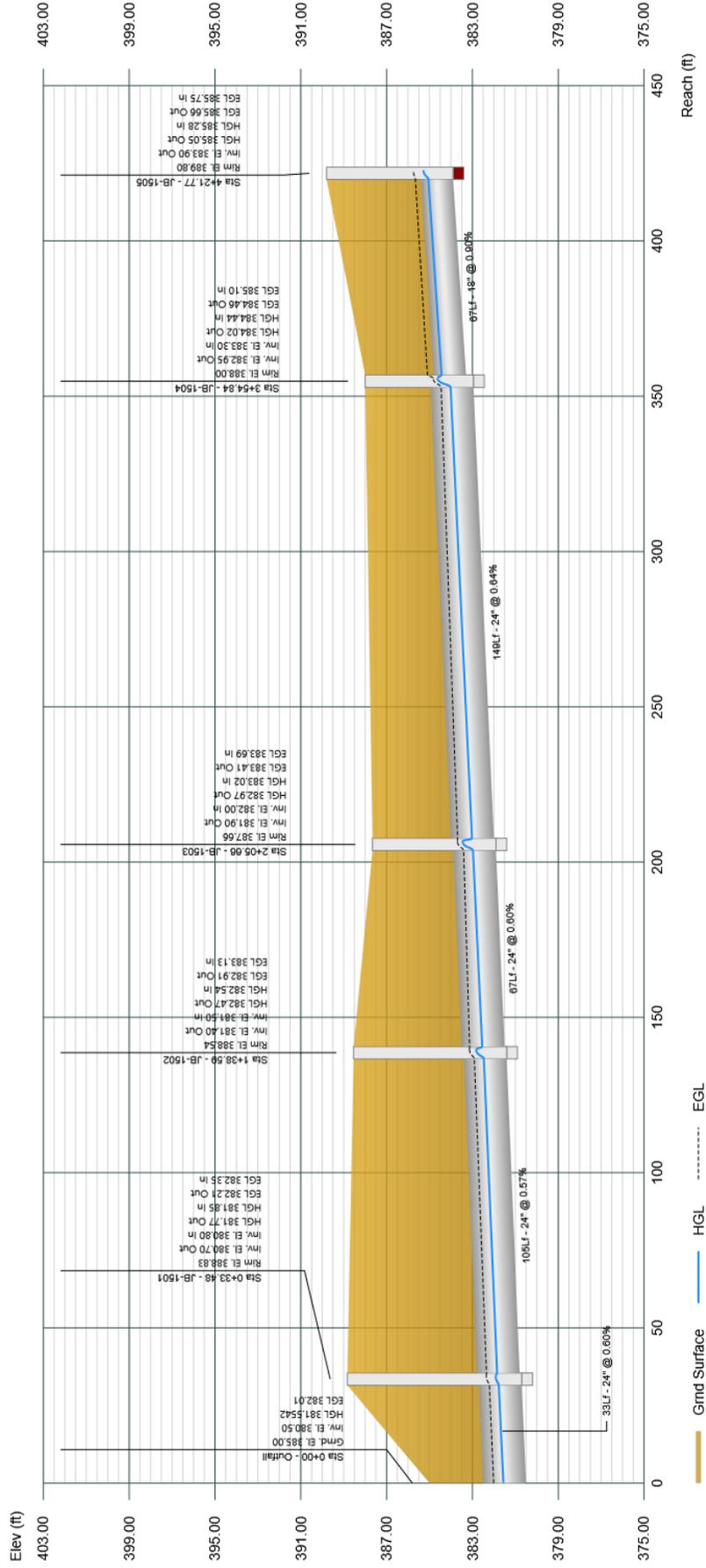
Notes: † Critical depth. ‡ Supercritical.

# Profile View

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 1500

07-19-2021



# *VELOCITY DISSIPATOR CALCULATIONS*

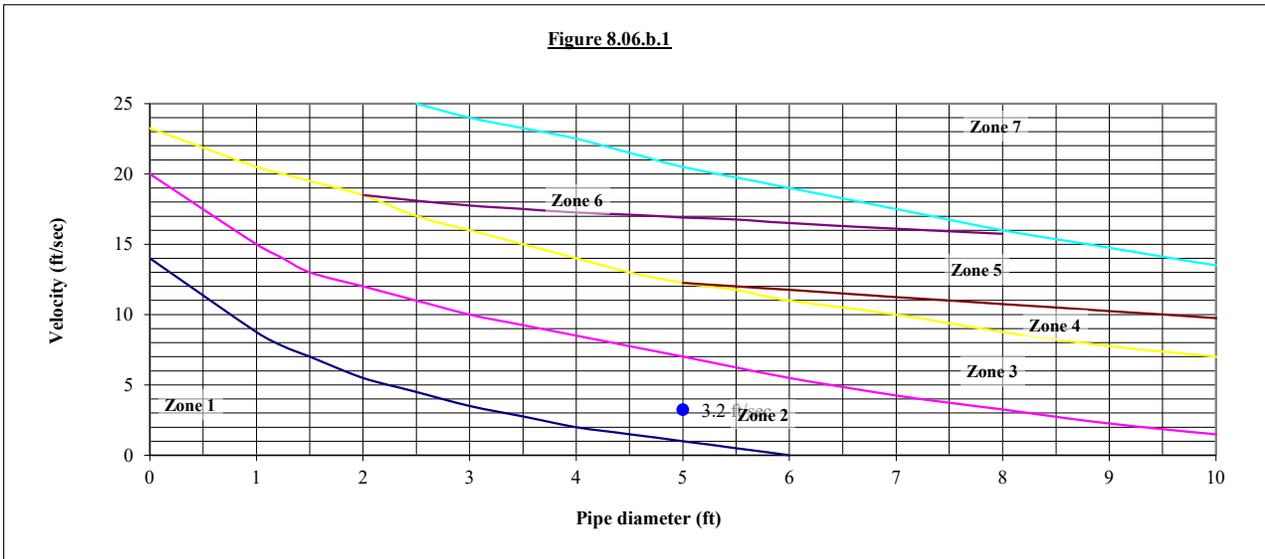


## DESIGN OF RIPRAP OUTLET PROTECTION WORKSHEET

Project: The Point South - Pkg 2  
 Project Number: AWH-20000  
 Outlet Number: EW-700

Date: 7/19/2021  
 Calculated By: WTO

Outlet flowrate = 0 cfs  
 Pipe diameter = 60 inches  
 Number of pipes = 1  
 Pipe separation = 0 feet  
 Outlet Velocity = 3.24 ft/sec



Zone from graph above = 2

Outlet pipe diameter = 60 in.  
 Outlet flowrate = 0.0 cfs  
 Outlet velocity = 3.2 ft/sec  
 Material = Class B

Length = 30.0 ft.  
 Width = 17.0 ft.  
 Stone diameter = 6 in.  
 Thickness = 18 in.

Zone	Material	Diameter	Thickness	Length	Width
1	Class A	3	12	4 x D(o)	3 x D(o)
2	Class B	6	18	6 x D(o)	3 x D(o)
3	Class I	13	24	8 x D(o)	3 x D(o)
4	Class I	13	24	8 x D(o)	3 x D(o)
5	Class II	23	36	10 x D(o)	3 x D(o)
6	Class II	23	36	10 x D(o)	3 x D(o)
7	Special study required				

- Calculations based on NY DOT method - Pages 8.06.05 through 8.06.06 in NC Erosion Control Manual
- Outlet velocity based on full-flow velocity

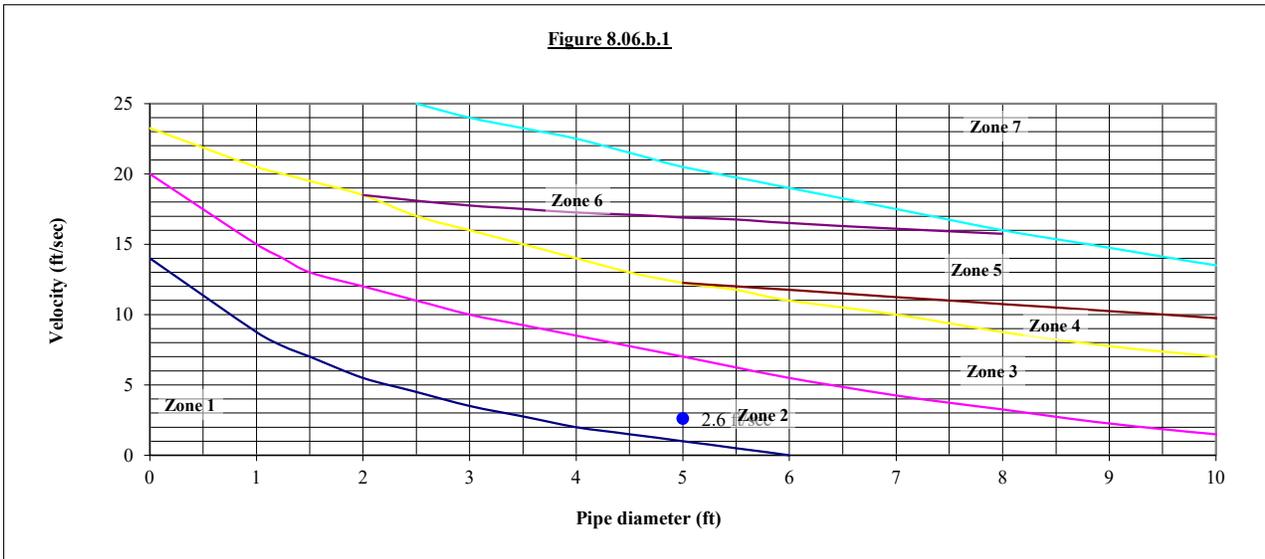


## DESIGN OF RIPRAP OUTLET PROTECTION WORKSHEET

Project: The Point South - Pkg 2  
 Project Number: AWH-20000  
 Outlet Number: EW-800

Date: 7/19/2021  
 Calculated By: WTO

Outlet flowrate = 0 cfs  
 Pipe diameter = 60 inches  
 Number of pipes = 1  
 Pipe separation = 0 feet  
 Outlet Velocity = 2.61 ft/sec



Zone from graph above = 2

Outlet pipe diameter 60 in.  
 Outlet flowrate 0.0 cfs  
 Outlet velocity 2.6 ft/sec  
 Material = Class B

Length = 30.0 ft.  
 Width = 17.0 ft.  
 Stone diameter = 6 in.  
 Thickness = 18 in.

Zone	Material	Diameter	Thickness	Length	Width
1	Class A	3	12	4 x D(o)	3 x D(o)
2	Class B	6	18	6 x D(o)	3 x D(o)
3	Class I	13	24	8 x D(o)	3 x D(o)
4	Class I	13	24	8 x D(o)	3 x D(o)
5	Class II	23	36	10 x D(o)	3 x D(o)
6	Class II	23	36	10 x D(o)	3 x D(o)
7	Special study required				

1. Calculations based on NY DOT method - Pages 8.06.05 through 8.06.06 in NC Erosion Control Manual
2. Outlet velocity based on full-flow velocity

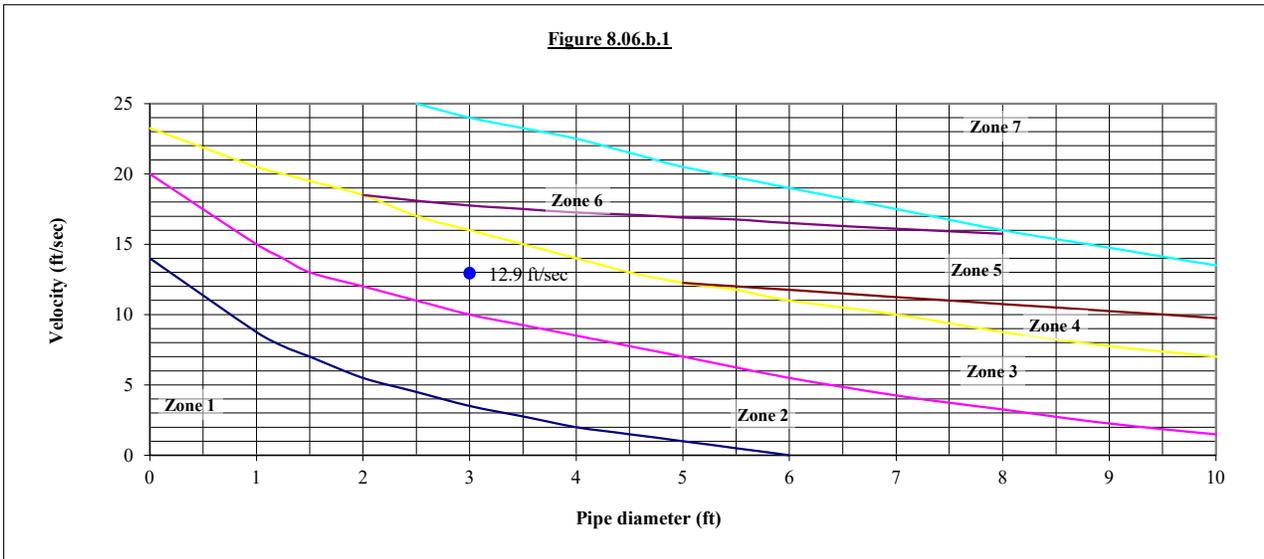


## DESIGN OF RIPRAP OUTLET PROTECTION WORKSHEET

Project: The Point South - Pkg 2  
 Project Number: AWH-20000  
 Outlet Number: EW-900

Date: 7/19/2021  
 Calculated By: WTO

Outlet flowrate =	48.16	cfs
Pipe diameter =	36	inches
Number of pipes =	1	
Pipe separation =	0	feet
Outlet Velocity =	12.93	ft/sec



Zone from graph above = 3

Outlet pipe diameter	36 in.
Outlet flowrate	48.2 cfs
Outlet velocity	12.9 ft/sec
Material	Class I

Length =	24.0 ft.
Width =	12.6 ft.
Stone diameter =	13 in.
Thickness =	24 in.

Zone	Material	Diameter	Thickness	Length	Width
1	Class A	3	12	4 x D(o)	3 x D(o)
2	Class B	6	18	6 x D(o)	3 x D(o)
3	Class I	13	24	8 x D(o)	3 x D(o)
4	Class I	13	24	8 x D(o)	3 x D(o)
5	Class II	23	36	10 x D(o)	3 x D(o)
6	Class II	23	36	10 x D(o)	3 x D(o)
7	Special study required				

- Calculations based on NY DOT method - Pages 8.06.05 through 8.06.06 in NC Erosion Control Manual
- Outlet velocity based on full-flow velocity

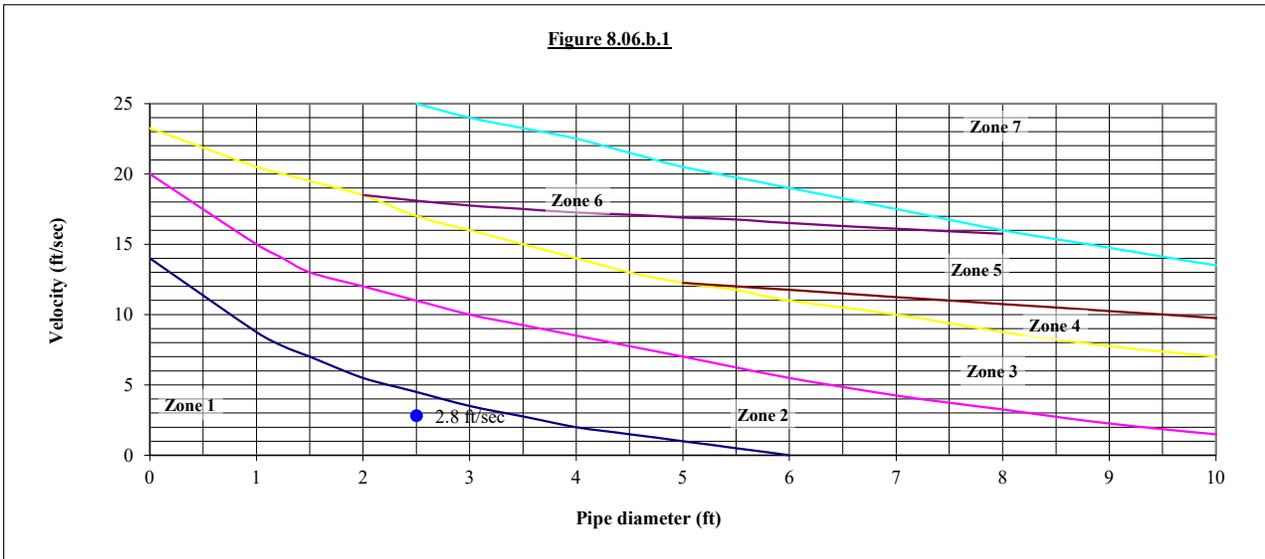


## DESIGN OF RIPRAP OUTLET PROTECTION WORKSHEET

Project: The Point South - Pkg 2  
 Project Number: AWH-20000  
 Outlet Number: EW-1000

Date: 7/19/2021  
 Calculated By: WTO

Outlet flowrate =	13.76	cfs
Pipe diameter =	30	inches
Number of pipes =	1	
Pipe separation =	0	feet
Outlet Velocity =	2.8	ft/sec



Zone from graph above = 2

Outlet pipe diameter	30 in.
Outlet flowrate	13.8 cfs
Outlet velocity	2.8 ft/sec
Material	Class B

Length =	15.0 ft.
Width =	8.5 ft.
Stone diameter =	6 in.
Thickness =	18 in.

Zone	Material	Diameter	Thickness	Length	Width
1	Class A	3	12	4 x D(o)	3 x D(o)
2	Class B	6	18	6 x D(o)	3 x D(o)
3	Class I	13	24	8 x D(o)	3 x D(o)
4	Class I	13	24	8 x D(o)	3 x D(o)
5	Class II	23	36	10 x D(o)	3 x D(o)
6	Class II	23	36	10 x D(o)	3 x D(o)
7	Special study required				

- Calculations based on NY DOT method - Pages 8.06.05 through 8.06.06 in NC Erosion Control Manual
- Outlet velocity based on full-flow velocity

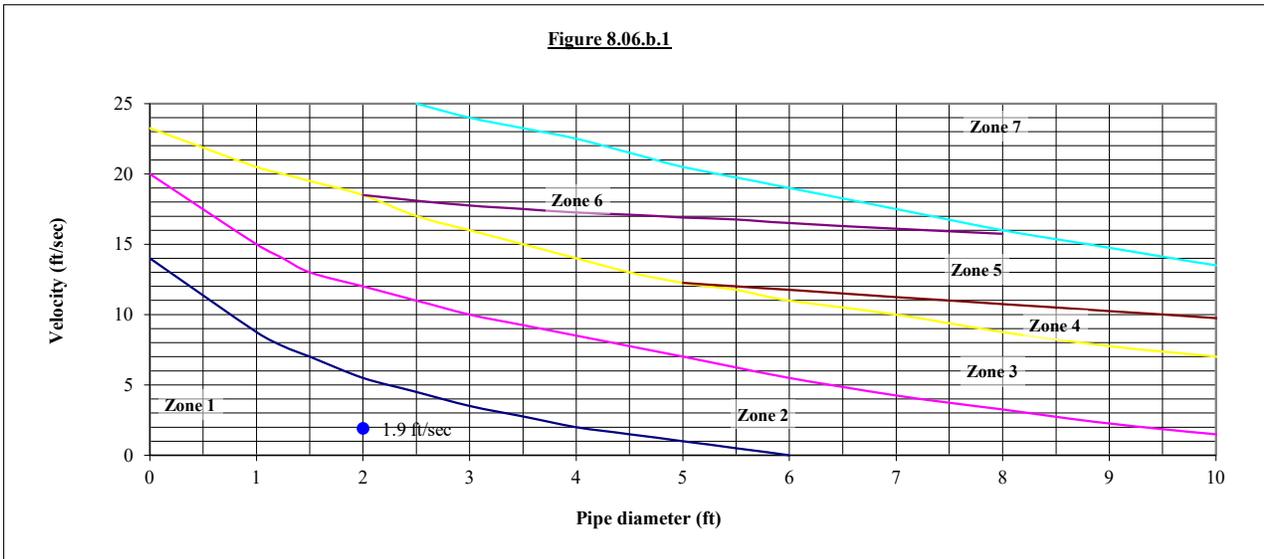


## DESIGN OF RIPRAP OUTLET PROTECTION WORKSHEET

Project: The Point South - Pkg 2  
 Project Number: AWH-20000  
 Outlet Number: EW-1100

Date: 7/19/2021  
 Calculated By: WTO

Outlet flowrate =	5.67	cfs
Pipe diameter =	24	inches
Number of pipes =	1	
Pipe separation =	0	feet
Outlet Velocity =	1.91	ft/sec



Zone from graph above = 2

Outlet pipe diameter	24 in.
Outlet flowrate	5.7 cfs
Outlet velocity	1.9 ft/sec
Material	Class B

Length	12.0 ft.
Width	6.8 ft.
Stone diameter	6 in.
Thickness	18 in.

Zone	Material	Diameter	Thickness	Length	Width
1	Class A	3	12	4 x D(o)	3 x D(o)
2	Class B	6	18	6 x D(o)	3 x D(o)
3	Class I	13	24	8 x D(o)	3 x D(o)
4	Class I	13	24	8 x D(o)	3 x D(o)
5	Class II	23	36	10 x D(o)	3 x D(o)
6	Class II	23	36	10 x D(o)	3 x D(o)
7	Special study required				

1. Calculations based on NY DOT method - Pages 8.06.05 through 8.06.06 in NC Erosion Control Manual
2. Outlet velocity based on full-flow velocity

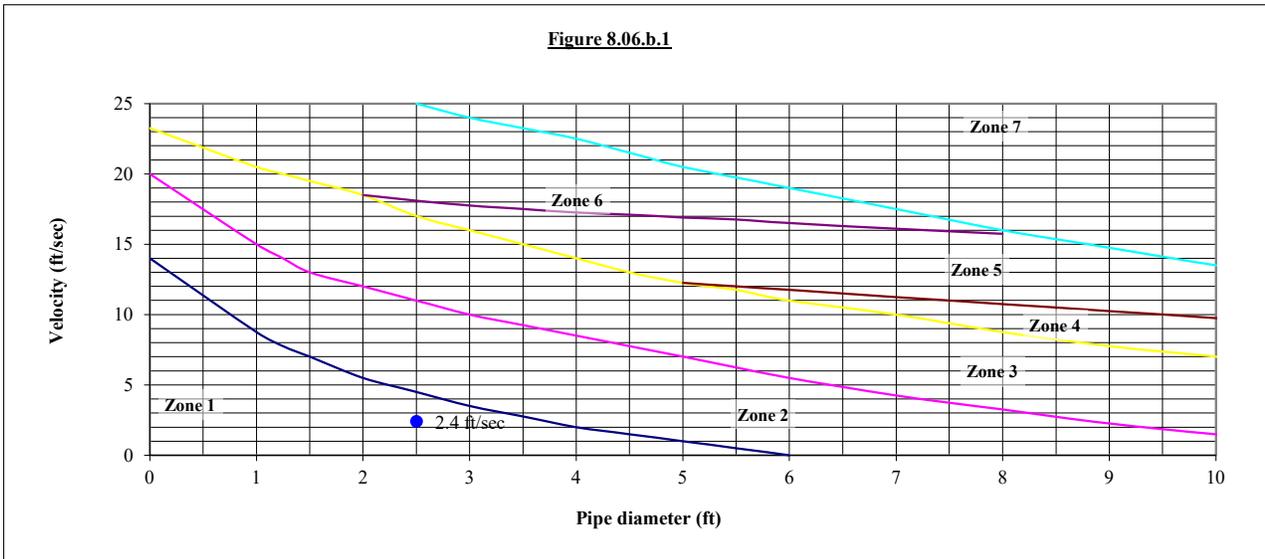


## DESIGN OF RIPRAP OUTLET PROTECTION WORKSHEET

Project: The Point South - Pkg 2  
 Project Number: AWH-20000  
 Outlet Number: EW-1200

Date: 7/19/2021  
 Calculated By: WTO

Outlet flowrate =	11.73	cfs
Pipe diameter =	30	inches
Number of pipes =	1	
Pipe separation =	0	feet
Outlet Velocity =	2.4	ft/sec



Zone from graph above = 2

Outlet pipe diameter	30 in.
Outlet flowrate	11.7 cfs
Outlet velocity	2.4 ft/sec
Material	Class B

Length =	15.0 ft.
Width =	8.5 ft.
Stone diameter =	6 in.
Thickness =	18 in.

Zone	Material	Diameter	Thickness	Length	Width
1	Class A	3	12	4 x D(o)	3 x D(o)
2	Class B	6	18	6 x D(o)	3 x D(o)
3	Class I	13	24	8 x D(o)	3 x D(o)
4	Class I	13	24	8 x D(o)	3 x D(o)
5	Class II	23	36	10 x D(o)	3 x D(o)
6	Class II	23	36	10 x D(o)	3 x D(o)
7	Special study required				

1. Calculations based on NY DOT method - Pages 8.06.05 through 8.06.06 in NC Erosion Control Manual
2. Outlet velocity based on full-flow velocity

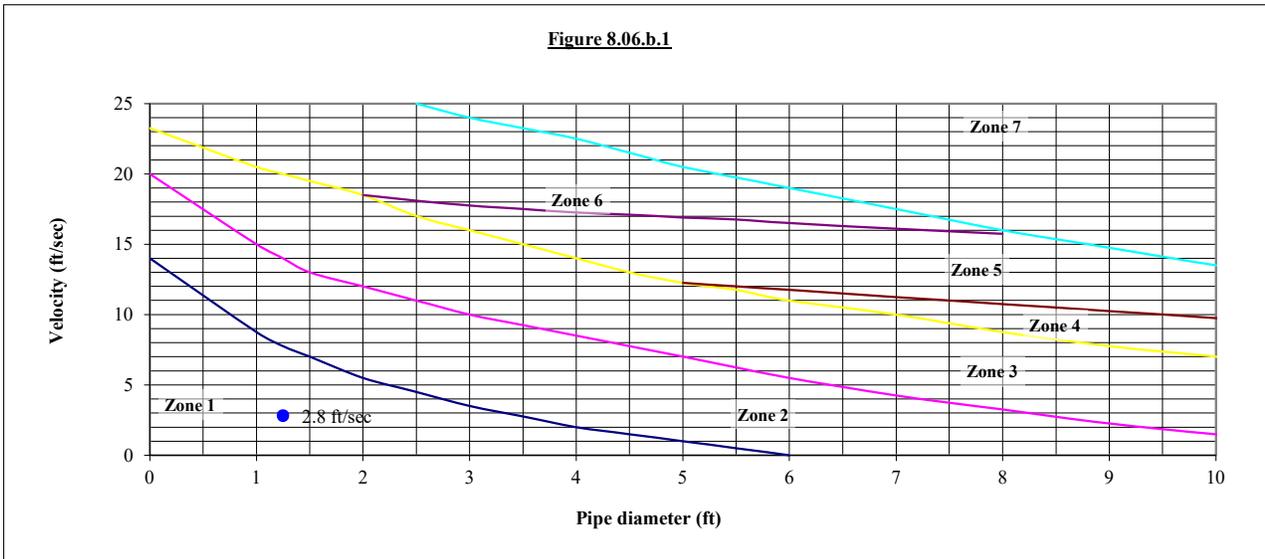


## DESIGN OF RIPRAP OUTLET PROTECTION WORKSHEET

Project: The Point South - Pkg 2  
 Project Number: AWH-20000  
 Outlet Number: EW-1300

Date: 7/19/2021  
 Calculated By: WTO

Outlet flowrate = 2.21 cfs  
 Pipe diameter = 15 inches  
 Number of pipes = 1  
 Pipe separation = 0 feet  
 Outlet Velocity = 2.82 ft/sec



Zone from graph above = 1

Outlet pipe diameter = 15 in.  
 Outlet flowrate = 2.2 cfs  
 Outlet velocity = 2.8 ft/sec  
 Material = Class A

Length = 5.0 ft.  
 Width = 3.3 ft.  
 Stone diameter = 3 in.  
 Thickness = 12 in.

Zone	Material	Diameter	Thickness	Length	Width
1	Class A	3	12	4 x D(o)	3 x D(o)
2	Class B	6	18	6 x D(o)	3 x D(o)
3	Class I	13	24	8 x D(o)	3 x D(o)
4	Class I	13	24	8 x D(o)	3 x D(o)
5	Class II	23	36	10 x D(o)	3 x D(o)
6	Class II	23	36	10 x D(o)	3 x D(o)
7	Special study required				

- Calculations based on NY DOT method - Pages 8.06.05 through 8.06.06 in NC Erosion Control Manual
- Outlet velocity based on full-flow velocity

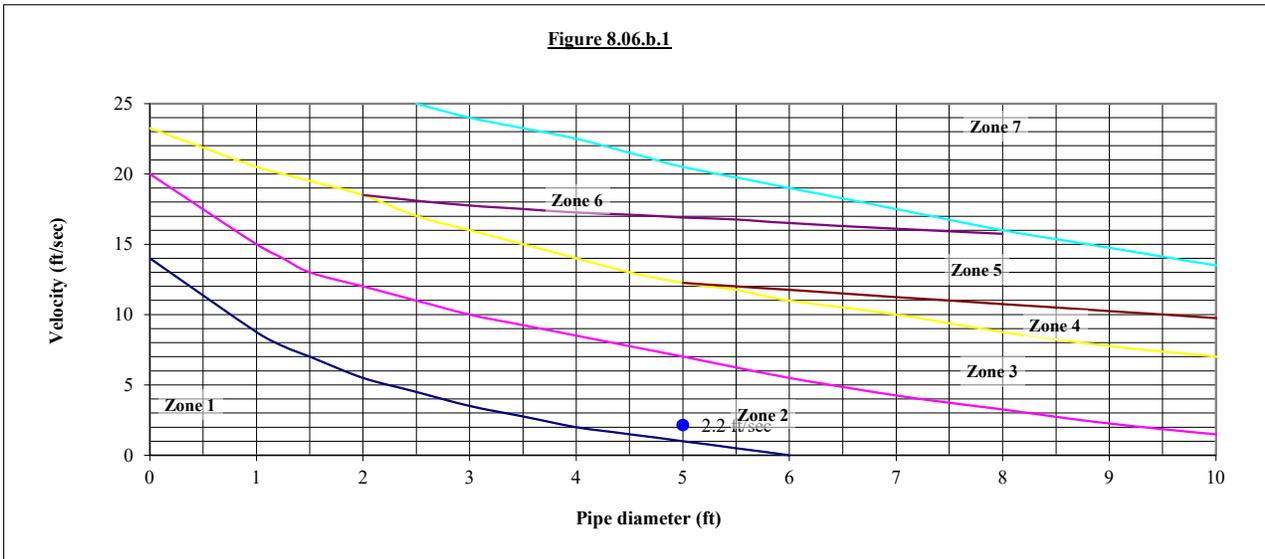


## DESIGN OF RIPRAP OUTLET PROTECTION WORKSHEET

Project: The Point South - Pkg 2  
 Project Number: AWH-20000  
 Outlet Number: EW-1400

Date: 7/19/2021  
 Calculated By: WTO

Outlet flowrate = 0 cfs  
 Pipe diameter = 60 inches  
 Number of pipes = 1  
 Pipe separation = 0 feet  
 Outlet Velocity = 2.15 ft/sec



Zone from graph above = 2

Outlet pipe diameter 60 in.  
 Outlet flowrate 0.0 cfs  
 Outlet velocity 2.2 ft/sec  
 Material = Class B

Length = 30.0 ft.  
 Width = 17.0 ft.  
 Stone diameter = 6 in.  
 Thickness = 18 in.

Zone	Material	Diameter	Thickness	Length	Width
1	Class A	3	12	4 x D(o)	3 x D(o)
2	Class B	6	18	6 x D(o)	3 x D(o)
3	Class I	13	24	8 x D(o)	3 x D(o)
4	Class I	13	24	8 x D(o)	3 x D(o)
5	Class II	23	36	10 x D(o)	3 x D(o)
6	Class II	23	36	10 x D(o)	3 x D(o)
7	Special study required				

1. Calculations based on NY DOT method - Pages 8.06.05 through 8.06.06 in NC Erosion Control Manual  
 2. Outlet velocity based on full-flow velocity

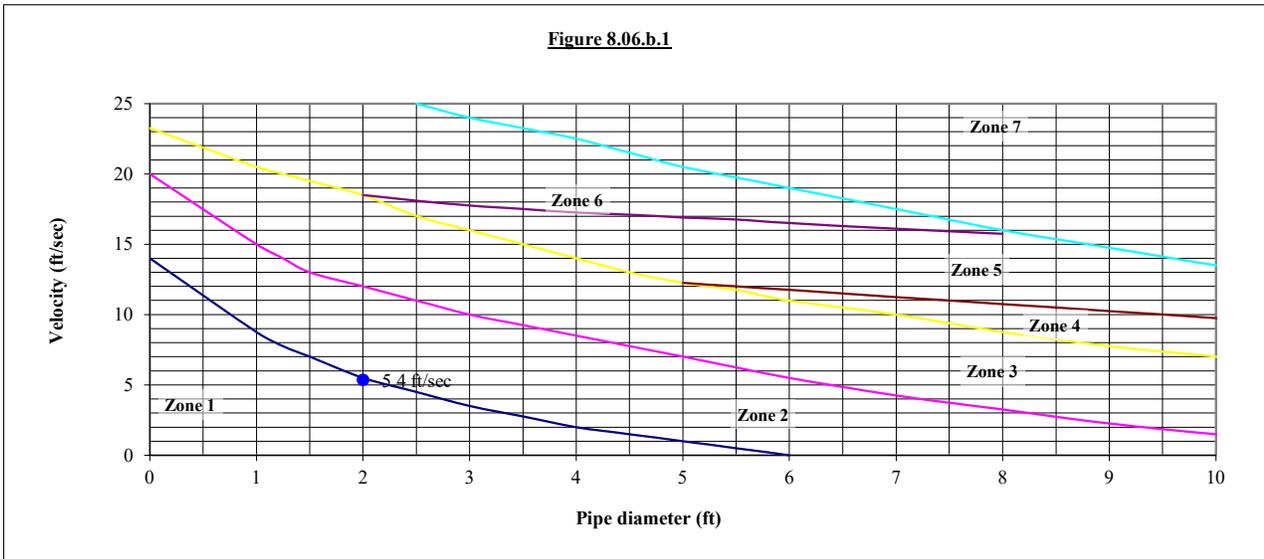


## DESIGN OF RIPRAP OUTLET PROTECTION WORKSHEET

Project: The Point South - Pkg 2  
 Project Number: AWH-20000  
 Outlet Number: EW-1500

Date: 7/19/2021  
 Calculated By: WTO

Outlet flowrate =	9.1	cfs
Pipe diameter =	24	inches
Number of pipes =	1	
Pipe separation =	0	feet
Outlet Velocity =	5.36	ft/sec



Zone from graph above = 2

Outlet pipe diameter	24 in.
Outlet flowrate	9.1 cfs
Outlet velocity	5.4 ft/sec
Material	Class B

Length =	12.0 ft.
Width =	6.8 ft.
Stone diameter =	6 in.
Thickness =	18 in.

Zone	Material	Diameter	Thickness	Length	Width
1	Class A	3	12	4 x D(o)	3 x D(o)
2	Class B	6	18	6 x D(o)	3 x D(o)
3	Class I	13	24	8 x D(o)	3 x D(o)
4	Class I	13	24	8 x D(o)	3 x D(o)
5	Class II	23	36	10 x D(o)	3 x D(o)
6	Class II	23	36	10 x D(o)	3 x D(o)
7	Special study required				

- Calculations based on NY DOT method - Pages 8.06.05 through 8.06.06 in NC Erosion Control Manual
- Outlet velocity based on full-flow velocity

# *INLET/GUTTER SPREAD REPORTS*



# Gutter Spread Check

**Project Name:** The Point - South CD Package 2  
**Project Number:** AWH-20000  
**Date:** 7/23/2021

Line No.	Inlet ID	C&G Width (ft)	B/B Width (ft)	Total Flow to Inlet (cfs)	GutterDepth (ft)	GutterSpread (ft)	Allowable Spread (ft)	CHECK
3	CB-703	2.5	35	0.73	0.09	1.72	9.5	PASS
4	CB-704	2.5	35	0.55	0.07	1.32	9.5	PASS
5	CB-705	2.5	35	0.5	0.15	4.3	9.5	PASS
6	CB-714	2.5	35	0.57	0.15	4.7	9.5	PASS
7	CB-716	2.5	35	0.59	0.16	4.8	9.5	PASS
8	CB-718	2.5	35	0.54	0.15	4.55	9.5	PASS
9	CB-720	2.5	35	0.45	0.14	4.05	9.5	PASS
10	CB-721	2.5	35	0.59	0.16	4.8	9.5	PASS
11	CB-717	2.5	35	0.63	0.16	5	9.5	PASS
12	CB-719	2.5	35	0.55	0.15	4.6	9.5	PASS
13	CB-715	2.5	35	0.54	0.15	4.55	9.5	PASS
14	CB-730	2.5	27	0.07	0.07	1.42	7.5	PASS
15	CB-734	2.5	27	0.3	0.12	3.05	7.5	PASS
23	CB-742	2.5	27	0.99	0.12	2.79	7.5	PASS
24	CB-744	2.5	27	0.49	0.15	4.25	7.5	PASS
25	CB-750	2.5	27	0.55	0.15	4.6	7.5	PASS
26	CB-751	2.5	27	0.53	0.15	4.5	7.5	PASS
27	CB-752	2.5	27	0.49	0.15	4.25	7.5	PASS
28	CB-753	2.5	27	0.48	0.06	1.22	7.5	PASS
29	CB-754	2.5	27	0.52	0.15	4.45	7.5	PASS
30	CB-755	2.5	27	0.33	0.12	3.2	7.5	PASS
31	CB-756	2.5	27	0.03	0.02	0.46	7.5	PASS
32	CB-757	2.5	27	0.24	0.11	2.5	7.5	PASS
33	CB-758	2.5	27	0.31	0.11	3.65	7.5	PASS
34	CB-743	2.5	27	1.05	0.12	2.79	7.5	PASS
35	CB-731	2.5	27	0.2	0.1	2.2	7.5	PASS
36	CB-732	2.5	35	0.51	0.06	1.24	9.5	PASS
37	CB-733	2.5	35	0.55	0.15	4.6	9.5	PASS
38	CB-706	2.5	35	0.49	0.15	4.25	9.5	PASS
46	CB-722	2.5	35	0.11	0.08	1.64	9.5	PASS
47	CB-723	2.5	27	0.04	0.05	1.1	7.5	PASS
48	CB-726	2.5	35	0.56	0.15	4.65	9.5	PASS



## Gutter Spread Check

**Project Name:** The Point - South CD Package 2  
**Project Number:** AWH-20000  
**Date:** 7/23/2021

Line No.	Inlet ID	C&G Width (ft)	B/B Width (ft)	Total Flow to Inlet (cfs)	GutterDepth (ft)	GutterSpread (ft)	Allowable Spread (ft)	CHECK
51	CB-745	2.5	27	0.46	0.14	4.1	7.5	PASS
56	CB-724	2.5	27	0.48	0.05	1.15	7.5	PASS
57	CB-725	2.5	27	1.03	0.1	2.79	7.5	PASS
58	CB-727	2.5	35	0.48	0.14	4.2	9.5	PASS
1	CB-801	2.5	35	0.56	0.05	1.15	9.5	PASS
2	CB-806	2.5	35	1.48	0.14	4.79	9.5	PASS
3	CB-807	2.5	27	0.24	0.09	2.45	7.5	PASS
4	CB-808	2.5	27	0.17	0.08	1.98	7.5	PASS
5	CB-810	2.5	27	0.22	0.08	2.1	7.5	PASS
7	CB-802	2.5	35	0.35	0.13	4.5	9.5	PASS
8	CB-804	2.5	35	0.6	0.13	4.7	9.5	PASS
9	CB-805	2.5	35	0.89	0.16	5.9	9.5	PASS
10	CB-812	2.5	27	0.2	0.09	2.35	7.5	PASS
11	CB-813	2.5	27	0.6	0.13	4.55	7.5	PASS
12	CB-815	2.5	27	0.61	0.12	4.2	7.5	PASS
13	CB-816	2.5	27	0.34	0.1	2.95	7.5	PASS
14	CB-817	2.5	27	0.25	0.09	2.4	7.5	PASS
15	CB-818	2.5	27	0.59	0.14	5.1	7.5	PASS
16	CB-820	2.5	27	0.58	0.14	5.05	7.5	PASS
17	CB-822	2.5	27	0.65	0.15	5.4	7.5	PASS
18	CB-825	2.5	27	0.63	0.15	5.3	7.5	PASS
24	CB-803	2.5	35	0.98	0.2	7.9	9.5	PASS
25	CB-831	2.5	35	0.64	0.15	5.6	9.5	PASS
26	CB-832	2.5	35	0.33	0.12	3.8	9.5	PASS
27	CB-819	2.5	27	0.58	0.14	5.05	7.5	PASS
28	CB-821	2.5	27	0.43	0.13	4.25	7.5	PASS
29	CB-833	2.5	35	0.29	0.11	3.5	9.5	PASS
32	CB-840	2.5	27	0.57	0.15	5.25	7.5	PASS
33	CB-855	2.5	27	1.1	0.11	3.29	7.5	PASS
34	CB-859	2.5	27	0.64	0.16	6.15	7.5	PASS
38	CB-856	2.5	27	0.27	0.1	2.8	7.5	PASS



## Gutter Spread Check

**Project Name:** The Point - South CD Package 2  
**Project Number:** AWH-20000  
**Date:** 7/23/2021

Line No.	Inlet ID	C&G Width (ft)	B/B Width (ft)	Total Flow to Inlet (cfs)	GutterDepth (ft)	GutterSpread (ft)	Allowable Spread (ft)	CHECK
42	CB-857	2.5	27	0.76	0.15	5.25	7.5	PASS
43	CB-841	2.5	27	0.59	0.15	5.3	7.5	PASS
44	CB-843	2.5	27	0.43	0.1	2.8	7.5	PASS
45	CB-844	2.5	27	0.46	0.1	2.9	7.5	PASS
47	CB-846	2.5	27	0.36	0.09	2.5	7.5	PASS
48	CB-850	2.5	27	0.11	0.06	1.62	7.5	PASS
49	CB-853	2.5	27	0.1	0.07	1.72	7.5	PASS
50	CB-854	2.5	27	0.09	0.09	2.4	7.5	PASS
51	CB-851	2.5	27	0.16	0.07	1.82	7.5	PASS
53	CB-823	2.5	27	0.57	0.14	5	7.5	PASS
54	CB-824	2.5	27	0.55	0.14	4.9	7.5	PASS
55	CB-847	2.5	27	0.56	0.11	3.3	7.5	PASS
60	CB-834	2.5	35	0.1	0.03	0.8	9.5	PASS
61	CB-835	2.5	35	0.2	0.1	2.8	9.5	PASS
62	CB-836	2.5	27	0.48	0.06	1.4	7.5	PASS
1	CB-901	2.5	27	0.53	0.05	1.15	7.5	PASS
2	CB-902	2.5	27	0.41	0.04	0.9	7.5	PASS
3	CB-903	2.5	27	0.17	0.09	2.65	7.5	PASS
4	CB-904	2.5	35	0.45	0.1	2.8	9.5	PASS
5	CB-905	2.5	35	0.16	0.07	1.65	9.5	PASS
6	CB-906	2.5	27	0.49	0.11	3.7	7.5	PASS
7	CB-907	2.5	27	0.53	0.12	3.9	7.5	PASS
8	CB-915	2.5	27	0.37	0.12	3.85	7.5	PASS
9	CB-920	2.5	27	0.44	0.1	3.05	7.5	PASS
10	CB-921	2.5	27	0.51	0.11	3.35	7.5	PASS
11	CB-922	2.5	27	0.31	0.08	2.2	7.5	PASS
12	CB-924	2.5	27	0.51	0.1	3.05	7.5	PASS
13	CB-928	2.5	27	0.3	0.1	2.85	7.5	PASS
14	CB-931	2.5	27	0.39	0.11	3.35	7.5	PASS
15	CB-932	2.5	27	0.25	0.08	1.95	7.5	PASS
16	CB-934	2.5	27	0.49	0.1	3.15	7.5	PASS



# Gutter Spread Check

**Project Name:** The Point - South CD Package 2  
**Project Number:** AWH-20000  
**Date:** 7/23/2021

Line No.	Inlet ID	C&G Width (ft)	B/B Width (ft)	Total Flow to Inlet (cfs)	GutterDepth (ft)	GutterSpread (ft)	Allowable Spread (ft)	CHECK
17	CB-937	2.5	27	0.84	0.13	4.4	7.5	PASS
21	CB-923	2.5	27	0.26	0.08	1.95	7.5	PASS
22	CB-941	2.5	27	0.51	0.12	3.85	7.5	PASS
23	CB-942	2.5	27	1.09	0.16	6.05	7.5	PASS
24	CB-908	2.5	35	0.17	0.07	1.67	9.5	PASS
26	CB-925	2.5	27	0.53	0.1	3.15	7.5	PASS
30	CB-933	2.5	27	0.67	0.11	3.65	7.5	PASS
31	CB-910	2.5	35	0.31	0.08	2.2	9.5	PASS
32	CB-911	2.5	35	0.47	0.1	2.9	9.5	PASS
33	CB-912	2.5	35	0.82	0.12	4.1	9.5	PASS
34	CB-913	2.5	35	0.54	0.1	3.15	9.5	PASS
36	CB-929	2.5	27	0.76	0.13	4.25	7.5	PASS
37	CB-930	2.5	27	0.5	0.11	3.25	7.5	PASS
38	CB-943	2.5	27	0.57	0.14	4.95	7.5	PASS
39	CB-944	2.5	27	0.53	0.14	4.75	7.5	PASS
40	CB-945	2.5	27	0.49	0.13	4.35	7.5	PASS
41	CB-946	2.5	27	0.28	0.02	0.4	7.5	PASS
42	CB-947	2.5	27	0.31	0.02	0.4	7.5	PASS
2	CB-1003	2.5	27	0.59	0.11	3.3	7.5	PASS
3	CB-1004	2.5	27	0.13	0.06	1.5	7.5	PASS
4	CB-1005	2.5	27	0.27	0.08	1.98	7.5	PASS
5	CB-1006	2.5	27	0.18	0.08	2.1	7.5	PASS
6	CB-1008	2.5	27	0.66	0.14	5	7.5	PASS
7	CB-1010	2.5	27	0.21	0.08	2.2	7.5	PASS
8	CB-1011	2.5	27	0.2	0.07	1.82	7.5	PASS
9	CB-1012	2.5	27	0.34	0.09	2.45	7.5	PASS
10	CB-1013	2.5	27	0.14	0.06	1.57	7.5	PASS
11	CB-1014	2.5	27	0.13	0.06	1.55	7.5	PASS
12	CB-1015	2.5	27	0.2	0.09	2.45	7.5	PASS
13	CB-1016	2.5	35	0.56	0.12	3.75	9.5	PASS
14	CB-1017	2.5	35	0.51	0.11	3.55	9.5	PASS



# Gutter Spread Check

**Project Name:** The Point - South CD Package 2  
**Project Number:** AWH-20000  
**Date:** 7/23/2021

Line No.	Inlet ID	C&G Width (ft)	B/B Width (ft)	Total Flow to Inlet (cfs)	GutterDepth (ft)	GutterSpread (ft)	Allowable Spread (ft)	CHECK
15	CB-1018	2.5	27	0.34	0.11	3.7	7.5	PASS
16	CB-1019	2.5	27	0.24	0.1	2.95	7.5	PASS
17	CB-1020	2.5	27	0.04	0.05	1.32	7.5	PASS
18	CB-1021	2.5	27	1.04	0.18	7	7.5	PASS
19	CB-1022	2.5	27	0.38	0.11	3.5	7.5	PASS
20	CB-1023	2.5	27	0.58	0.13	4.7	7.5	PASS
21	CB-1024	2.5	27	0.49	0.13	4.25	7.5	PASS
25	CB-1028	2.5	27	0.84	0.16	5.8	7.5	PASS
26	CB-1029	2.5	27	0.66	0.14	4.85	7.5	PASS
27	CB-1030	2.5	27	0.63	0.14	4.75	7.5	PASS
28	CB-1007	2.5	27	0.15	0.08	1.9	7.5	PASS
29	CB-1009	2.5	27	1.02	0.18	7	7.5	PASS
1	CB-1101	2.5	35	0.31	0.09	2.35	9.5	PASS
2	CB-1102	2.5	35	0.62	0.12	3.75	9.5	PASS
3	CB-1103	2.5	35	0.2	0.08	2	9.5	PASS
4	CB-1104	2.5	35	0.16	0.07	1.85	9.5	PASS
1	CB-1404	2.5	35	0.07	0.06	1.52	9.5	PASS
2	CB-1405	2.5	35	0.38	0.12	3.85	9.5	PASS
3	CB-1418	2.5	35	0.74	0.16	5.7	9.5	PASS
4	CB-1422	2.5	35	0.2	0.09	2.5	9.5	PASS
5	CB-1423	2.5	35	0.12	0.08	1.88	9.5	PASS
6	CB-1430	2.5	35	0.33	0.11	3.5	9.5	PASS
7	CB-1435	2.5	35	0.33	0.12	3.65	9.5	PASS
8	CB-1437	2.5	27	0.62	0.15	5.2	7.5	PASS
9	CB-1439	2.5	27	0.37	0.12	3.8	7.5	PASS
10	CB-1442	2.5	27	0.22	0.1	2.75	7.5	PASS
11	CB-1443	2.5	27	0.19	0.09	2.5	7.5	PASS
12	CB-1440	2.5	27	0.42	0.13	4.1	7.5	PASS
14	CB-1438	2.5	27	0.63	0.15	5.25	7.5	PASS
15	CB-1424	2.5	27	0.14	0.08	1.83	7.5	PASS



## Gutter Spread Check

**Project Name:** The Point - South CD Package 2  
**Project Number:** AWH-20000  
**Date:** 7/23/2021

Line No.	Inlet ID	C&G Width (ft)	B/B Width (ft)	Total Flow to Inlet (cfs)	GutterDepth (ft)	GutterSpread (ft)	Allowable Spread (ft)	CHECK
16	CB-1425	2.5	27	0.93	0.09	2.29	7.5	PASS
17	CB-1427	2.5	27	0.11	0.07	1.74	7.5	PASS
18	CB-1428	2.5	27	0.37	0.12	3.65	7.5	PASS
19	CB-1427A	2.5	27	0.58	0.06	1.42	7.5	PASS
24	CB-1429	2.5	27	0.4	0.06	1.42	7.5	PASS
25	CB-1426	2.5	27	1.25	0.12	3.79	7.5	PASS
26	CB-1401	2.5	35	0.18	0.09	2.5	9.5	PASS
27	CB-1402	2.5	27	0.58	0.08	1.52	7.5	PASS
31	CB-1408	2.5	27	0.19	0.09	2.5	7.5	PASS
32	CB-1409	2.5	27	0.37	0.12	3.55	7.5	PASS
33	CB-1410	2.5	27	0.4	0.12	3.7	7.5	PASS
35	CB-1406	2.5	35	0.71	0.16	5.55	9.5	PASS
36	CB-1407	2.5	35	0.36	0.12	3.7	9.5	PASS
37	CB-1412	2.5	27	0.21	0.09	2.4	7.5	PASS
38	CB-1413	2.5	27	1.28	0.12	3.79	7.5	PASS
41	CB-1414	2.5	27	1.03	0.1	2.79	7.5	PASS

# Inlet Report

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 700

07-23-2021

Line No	Inlet		Q				Curb		Grate			Gutter							Inlet			Byp Line No		
	Id	Type	Catch (cfs)	Carry (cfs)	Capt (cfs)	Byp (cfs)	Ht (in)	L (ft)	L (ft)	W (ft)	Area (sqft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depth (ft)		Spread (ft)	Depr (in)
1	JB-701	Manhole	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	DI-702	Drop Grate	0.06	0.00	0.06	0.00	-	2.00	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.013	0.02	3.76	0.02	3.76	0.02	3.76	0.0	0
3	CB-703	Combination	0.65	0.09	0.73	0.00	3.0	3.00	3.00	3.22	Sag	2.00	0.050	0.020	0.013	0.09	0.23	1.89	0.23	1.72	0.23	1.89	2.5	0
4	CB-704	Combination	0.51	0.04	0.55	0.00	3.0	3.00	3.00	3.22	Sag	2.00	0.050	0.020	0.013	0.07	0.21	1.72	0.21	1.32	0.21	1.72	2.5	0
5	CB-705	Combination	0.48	0.06	0.50	0.04	3.0	3.00	3.00	-	0.010	2.00	0.050	0.020	0.013	0.15	0.21	1.69	0.21	4.30	0.21	1.69	2.5	4
6	CB-714	Combination	0.57	0.06	0.57	0.06	3.0	3.00	3.00	-	0.010	2.00	0.050	0.020	0.013	0.15	0.22	1.80	0.22	4.70	0.22	1.80	2.5	5
7	CB-716	Combination	0.60	0.05	0.59	0.06	3.0	3.00	3.00	-	0.010	2.00	0.050	0.020	0.013	0.16	0.23	1.82	0.23	4.80	0.23	1.82	2.5	6
8	CB-718	Combination	0.57	0.03	0.54	0.05	3.0	3.00	3.00	-	0.010	2.00	0.050	0.020	0.013	0.15	0.22	1.76	0.22	4.55	0.22	1.76	2.5	7
9	CB-720	Combination	0.48	0.00	0.45	0.03	3.0	3.00	3.00	-	0.010	2.00	0.050	0.020	0.013	0.14	0.20	1.63	0.20	4.05	0.20	1.63	2.5	8
10	CB-721	Combination	0.63	0.03	0.59	0.07	3.0	3.00	3.00	-	0.010	2.00	0.050	0.020	0.013	0.16	0.23	1.83	0.23	4.80	0.23	1.83	2.5	12
11	CB-717	Combination	0.66	0.06	0.63	0.09	3.0	3.00	3.00	-	0.010	2.00	0.050	0.020	0.013	0.16	0.23	1.88	0.23	5.00	0.23	1.88	2.5	13
12	CB-719	Combination	0.54	0.07	0.55	0.06	3.0	3.00	3.00	-	0.010	2.00	0.050	0.020	0.013	0.15	0.22	1.78	0.22	4.60	0.22	1.78	2.5	11
13	CB-715	Combination	0.51	0.09	0.54	0.05	3.0	3.00	3.00	-	0.010	2.00	0.050	0.020	0.013	0.15	0.22	1.76	0.22	4.55	0.22	1.76	2.5	38
14	CB-730	Combination	0.07	0.00	0.07	0.00	3.0	3.00	3.00	-	0.010	2.00	0.050	0.020	0.013	0.07	0.10	0.80	0.10	1.42	0.10	0.80	2.5	15
15	CB-734	Combination	0.31	0.00	0.30	0.00	3.0	3.00	3.00	-	0.010	2.00	0.050	0.020	0.013	0.12	0.17	1.38	0.17	3.05	0.17	1.38	2.5	23
16	DI-735	Drop Grate	0.68	0.00	0.68	0.00	-	2.00	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.09	0.09	11.25	0.09	11.25	0.09	11.25	0.0	0
17	DI-736	Drop Grate	0.81	0.00	0.81	0.00	-	2.00	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.10	0.10	12.40	0.10	12.40	0.10	12.40	0.0	0
18	DI-737	Drop Grate	2.18	0.00	2.18	0.00	-	2.00	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.20	0.20	22.22	0.20	22.22	0.20	22.22	0.0	0
19	DI-738	Drop Grate	0.58	0.00	0.58	0.00	-	2.00	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.08	0.08	10.31	0.08	10.31	0.08	10.31	0.0	0
20	DI-739	Drop Grate	1.68	0.00	1.68	0.00	-	2.00	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.17	0.17	18.97	0.17	18.97	0.17	18.97	0.0	0
21	DI-740	Drop Grate	1.66	0.00	1.66	0.00	-	2.00	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.17	0.17	18.81	0.17	18.81	0.17	18.81	0.0	0
22	DI-741	Drop Grate	1.13	0.00	1.13	0.00	-	2.00	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.13	0.13	15.01	0.13	15.01	0.13	15.01	0.0	0

Notes: Return Period = 1-yr. All curb inlets are Horiz throat.

Project File: Storm System 700.sws

# Inlet Report

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 700

07-23-2021

Line No	Inlet		Q				Curb		Grate			Gutter						Inlet			Byp Line No			
	Id	Type	Catch (cfs)	Carry (cfs)	Capt (cfs)	Byp (cfs)	Ht (in)	L (ft)	L (ft)	W (ft)	Area (sqft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)		Depth (ft)	Spread (ft)	Depr (in)
23	CB-742	Combination	0.95	0.04	0.99	0.00	3.0	3.00	3.00	2.00	3.22	Sag	2.00	0.050	0.020	0.013	0.12	2.79	0.26	2.79	0.26	2.79	2.5	0
24	CB-744	Combination	0.48	0.05	0.49	0.04	3.0	3.00	3.00	2.00	-	0.010	2.00	0.050	0.020	0.013	0.15	4.25	0.21	4.25	0.21	1.68	2.5	23
25	CB-750	Combination	0.60	0.00	0.55	0.05	3.0	3.00	3.00	2.00	-	0.010	2.00	0.050	0.020	0.013	0.15	4.60	0.22	4.60	0.22	1.76	2.5	24
26	CB-751	Combination	0.54	0.04	0.53	0.04	3.0	3.00	3.00	2.00	-	0.010	2.00	0.050	0.020	0.013	0.15	4.50	0.22	4.50	0.22	1.74	2.5	51
27	CB-752	Combination	0.48	0.05	0.49	0.04	3.0	3.00	3.00	2.00	-	0.010	2.00	0.050	0.020	0.013	0.15	4.25	0.21	4.25	0.21	1.68	2.5	26
28	CB-753	Combination	0.48	0.00	0.48	0.00	3.0	3.00	3.00	2.00	-	1.000	2.00	0.050	0.020	0.013	0.06	1.22	0.09	1.22	0.09	0.69	2.5	25
29	CB-754	Combination	0.57	0.00	0.52	0.05	3.0	3.00	3.00	2.00	-	0.010	2.00	0.050	0.020	0.013	0.15	4.45	0.22	4.45	0.22	1.73	2.5	27
30	CB-755	Combination	0.33	0.00	0.33	0.00	3.0	3.00	3.00	2.00	-	0.010	2.00	0.050	0.020	0.013	0.12	3.20	0.18	3.20	0.18	1.41	2.5	28
31	CB-756	Combination	0.03	0.00	0.03	0.00	3.0	3.00	3.00	2.00	-	1.000	2.00	0.050	0.020	0.013	0.02	0.46	0.03	0.46	0.03	0.26	2.5	30
32	CB-757	Combination	0.24	0.00	0.24	0.00	3.0	3.00	3.00	2.00	-	0.010	2.00	0.050	0.020	0.013	0.11	2.50	0.16	2.50	0.16	1.25	2.5	29
33	CB-758	Combination	0.33	0.00	0.31	0.01	3.0	3.00	3.00	2.00	-	0.010	2.00	0.040	0.020	0.013	0.11	3.65	0.18	3.65	0.18	1.41	2.5	57
34	CB-743	Combination	1.02	0.03	1.05	0.00	3.0	3.00	3.00	2.00	3.22	Sag	2.00	0.050	0.020	0.013	0.12	2.79	0.26	2.79	0.26	2.79	2.5	0
35	CB-731	Combination	0.20	0.00	0.20	0.00	3.0	3.00	3.00	2.00	-	0.010	2.00	0.050	0.020	0.013	0.10	2.20	0.15	2.20	0.15	1.18	2.5	34
36	CB-732	Combination	0.51	0.00	0.51	0.00	3.0	3.00	3.00	2.00	-	1.000	2.00	0.050	0.020	0.013	0.06	1.24	0.09	1.24	0.09	0.70	2.5	35
37	CB-733	Combination	0.60	0.00	0.55	0.05	3.0	3.00	3.00	2.00	-	0.010	2.00	0.050	0.020	0.013	0.15	4.60	0.22	4.60	0.22	1.76	2.5	3
38	CB-706	Combination	0.48	0.05	0.49	0.04	3.0	3.00	3.00	2.00	-	0.010	2.00	0.050	0.020	0.013	0.15	4.25	0.21	4.25	0.21	1.68	2.5	3
39	DI-707	Drop Grate	0.02	0.00	0.02	0.00	-	-	2.00	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.01	2.82	0.01	2.82	0.01	2.82	0.0	0
40	DI-708	Drop Grate	1.04	0.00	1.04	0.00	-	-	2.00	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.12	14.32	0.12	14.32	0.12	14.32	0.0	0
41	DI-709	Drop Grate	0.81	0.00	0.81	0.00	-	-	2.00	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.10	12.40	0.10	12.40	0.10	12.40	0.0	0
42	DI-710	Drop Grate	0.42	0.00	0.42	0.00	-	-	2.00	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.07	8.69	0.07	8.69	0.07	8.69	0.0	0
43	DI-711	Drop Grate	0.42	0.00	0.42	0.00	-	-	2.00	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.07	8.69	0.07	8.69	0.07	8.69	0.0	0
44	DI-712	Drop Grate	1.66	0.00	1.66	0.00	-	-	2.00	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.17	18.86	0.17	18.86	0.17	18.86	0.0	0

Notes: Return Period = 1-yr. All curb inlets are Horiz throat.

Project File: Storm System 700.sws

# Inlet Report

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 700

07-23-2021

Line No	Inlet		Q				Curb		Grate			Gutter							Inlet			Byp Line No						
	Id	Type	Catch (cfs)	Carry (cfs)	Capt (cfs)	Byp (cfs)	Ht (in)	L (ft)	L (ft)	W (ft)	Area (sqft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depth (ft)		Spread (ft)	Depth (ft)	Spread (ft)	Depth (ft)	Depr (in)	
45	DI-713	Drop Grate	0.94	0.00	0.94	0.00	-	-	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.11	13.49	0.11	13.49	0.11	13.49	0.11	13.49	0.00	0.00	0.00	0.0	
46	CB-722	Combination	0.11	0.00	0.11	0.00	3.0	3.00	2.00	-	0.010	2.00	0.050	0.020	0.013	0.08	1.64	0.12	0.93	0.12	0.93	0.12	0.93	2.5	2.5	2.5	9	
47	CB-723	Combination	0.04	0.00	0.04	0.00	3.0	3.00	2.00	-	0.010	2.00	0.050	0.020	0.013	0.05	1.10	0.08	0.62	0.08	0.62	0.08	0.62	2.5	2.5	2.5	56	
48	CB-726	Combination	0.61	0.00	0.56	0.05	3.0	3.00	2.00	-	0.010	2.00	0.050	0.020	0.013	0.15	4.65	0.22	1.78	0.22	1.78	0.22	1.78	2.5	2.5	2.5	57	
49	JB-728	Manhole	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
50	DI-729	Drop Grate	1.90	0.00	1.90	0.00	-	-	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.18	20.41	0.18	20.41	0.18	20.41	0.18	20.41	0.00	0.00	0.00	0	
51	CB-745	Combination	0.45	0.04	0.46	0.03	3.0	3.00	2.00	-	0.010	2.00	0.050	0.020	0.013	0.14	4.10	0.20	1.64	0.20	1.64	0.20	1.64	2.5	2.5	2.5	34	
52	DI-746	Drop Grate	0.81	0.00	0.81	0.00	-	-	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.10	12.40	0.10	12.40	0.10	12.40	0.10	12.40	0.00	0.00	0.00	0	
53	DI-747	Drop Grate	1.01	0.00	1.01	0.00	-	-	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.12	14.12	0.12	14.12	0.12	14.12	0.12	14.12	0.00	0.00	0.00	0	
54	DI-748	Drop Grate	1.20	0.00	1.20	0.00	-	-	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.14	15.53	0.14	15.53	0.14	15.53	0.14	15.53	0.00	0.00	0.00	0	
55	DI-749	Drop Grate	1.32	0.00	1.32	0.00	-	-	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.14	16.45	0.14	16.45	0.14	16.45	0.14	16.45	0.00	0.00	0.00	0	
56	CB-724	Combination	0.48	0.00	0.48	0.00	3.0	3.00	2.00	3.22	Sag	2.00	0.040	0.020	0.013	0.05	1.15	0.21	1.72	0.21	1.72	0.21	1.72	2.5	2.5	2.5	0	
57	CB-725	Combination	0.96	0.07	1.03	0.00	3.0	3.00	2.00	3.22	Sag	2.00	0.040	0.020	0.013	0.10	2.79	0.26	2.79	0.26	2.79	0.26	2.79	2.5	2.5	2.5	0	
58	CB-727	Combination	0.51	0.00	0.48	0.03	3.0	3.00	2.00	-	0.010	2.00	0.050	0.020	0.013	0.14	4.20	0.21	1.66	0.21	1.66	0.21	1.66	2.5	2.5	2.5	10	

Notes: Return Period = 1-yr. All curb inlets are Horiz throat.

Project File: Storm System 700.sws

# Inlet Report

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 800

07-22-2021

Line No	Inlet		Q			Curb		Grate			Gutter							Inlet			Byp Line No								
	Id	Type	Catch (cfs)	Carry (cfs)	Cap (cfs)	Byp (cfs)	Ht (in)	L (ft)	L (ft)	W (ft)	Area (sqft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)		Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depth (ft)			
1	CB-801	Combination	0.51	0.05	0.56	0.00	3.0	3.00	3.00	2.00	6.00	Sag	2.00	0.040	0.020	0.013	0.05	1.15	0.21	1.72	0.21	1.15	0.05	1.15	0.21	1.72	0.21	2.5	0
2	CB-806	Combination	1.35	0.13	1.48	0.00	3.0	3.00	3.00	2.00	6.00	Sag	2.00	0.040	0.020	0.013	0.14	4.79	0.30	4.79	0.30	4.79	0.14	4.79	0.30	4.79	0.30	2.5	0
3	CB-807	Combination	0.24	0.00	0.24	0.00	3.0	3.00	3.00	2.00	-	0.020	2.00	0.040	0.020	0.013	0.09	2.45	0.14	1.10	0.14	2.45	0.09	2.45	0.14	1.10	0.14	2.5	2
4	CB-808	Combination	0.17	0.00	0.17	0.00	3.0	3.00	3.00	2.00	-	0.020	2.00	0.040	0.020	0.013	0.08	1.98	0.12	0.97	0.12	1.98	0.08	1.98	0.12	0.97	0.12	2.5	2
5	CB-810	Combination	0.14	0.08	0.22	0.00	3.0	3.00	3.00	2.00	-	0.027	2.00	0.040	0.020	0.013	0.08	2.10	0.13	1.01	0.13	2.10	0.08	2.10	0.13	1.01	0.13	2.5	4
6	DI-811	Drop Grate	0.45	0.00	0.45	0.00	-	-	2.00	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.07	9.05	0.07	9.05	0.07	9.05	0.07	9.05	0.07	9.05	0.07	0.0	0
7	CB-802	Combination	0.31	0.07	0.35	0.03	3.0	3.00	3.00	2.00	-	0.006	2.00	0.040	0.020	0.013	0.13	4.50	0.21	1.65	0.21	4.50	0.13	4.50	0.21	1.65	0.21	2.5	1
8	CB-804	Combination	0.67	0.00	0.60	0.07	3.0	3.00	3.00	2.00	-	0.016	2.00	0.040	0.020	0.013	0.13	4.70	0.21	1.69	0.21	4.70	0.13	4.70	0.21	1.69	0.21	2.5	7
9	CB-805	Combination	1.12	0.00	0.89	0.23	3.0	3.00	3.00	2.00	-	0.016	2.00	0.040	0.020	0.013	0.16	5.90	0.25	2.28	0.25	5.90	0.16	5.90	0.25	2.28	0.25	2.5	24
10	CB-812	Combination	0.20	0.00	0.20	0.00	3.0	3.00	3.00	2.00	-	0.017	2.00	0.040	0.020	0.013	0.09	2.35	0.13	1.06	0.13	2.35	0.09	2.35	0.13	1.06	0.13	2.5	0
11	CB-813	Combination	0.67	0.00	0.60	0.08	3.0	3.00	3.00	2.00	-	0.017	2.00	0.040	0.020	0.013	0.13	4.55	0.21	1.66	0.21	4.55	0.13	4.55	0.21	1.66	0.21	2.5	5
12	CB-815	Combination	0.66	0.00	0.61	0.05	3.0	3.00	3.00	2.00	-	0.024	2.00	0.040	0.020	0.013	0.12	4.20	0.19	1.55	0.19	4.20	0.12	4.20	0.19	1.55	0.19	2.5	42
13	CB-816	Combination	0.34	0.00	0.34	0.00	3.0	3.00	3.00	2.00	-	0.024	2.00	0.040	0.020	0.013	0.10	2.95	0.15	1.22	0.15	2.95	0.10	2.95	0.15	1.22	0.15	2.5	42
14	CB-817	Combination	0.15	0.10	0.25	0.00	3.0	3.00	3.00	2.00	-	0.024	2.00	0.040	0.020	0.013	0.09	2.40	0.13	1.08	0.13	2.40	0.09	2.40	0.13	1.08	0.13	2.5	13
15	CB-818	Combination	0.60	0.09	0.59	0.10	3.0	3.00	3.00	2.00	-	0.011	2.00	0.040	0.020	0.013	0.14	5.10	0.23	1.82	0.23	5.10	0.14	5.10	0.23	1.82	0.23	2.5	14
16	CB-820	Combination	0.54	0.13	0.58	0.09	3.0	3.00	3.00	2.00	-	0.011	2.00	0.040	0.020	0.013	0.14	5.05	0.22	1.80	0.22	5.05	0.14	5.05	0.22	1.80	0.22	2.5	15
17	CB-822	Combination	0.69	0.09	0.65	0.13	3.0	3.00	3.00	2.00	-	0.011	2.00	0.040	0.020	0.013	0.15	5.40	0.24	1.91	0.24	5.40	0.15	5.40	0.24	1.91	0.24	2.5	16
18	CB-825	Combination	0.66	0.08	0.63	0.11	3.0	3.00	3.00	2.00	-	0.011	2.00	0.040	0.020	0.013	0.15	5.30	0.23	1.87	0.23	5.30	0.15	5.30	0.23	1.87	0.23	2.5	28
19	CB-826	Combination	0.32	0.00	0.32	0.00	3.0	3.00	3.00	2.00	0.20	Sag	2.00	0.040	0.020	0.013	0.06	1.40	0.22	1.81	0.22	1.40	0.06	1.40	0.22	1.81	0.22	2.5	0
20	DI-828	Drop Grate	0.55	0.00	0.55	0.00	-	-	2.00	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.08	10.02	0.08	10.02	0.08	10.02	0.08	10.02	0.08	10.02	0.08	0.0	0
21	YI-829	Drop Grate	0.58	0.00	0.58	0.00	-	-	1.00	1.00	1.00	Sag	2.00	0.020	0.020	0.013	0.13	15.19	0.13	15.19	0.13	15.19	0.13	15.19	0.13	15.19	0.13	0.0	0
22	YI-830	Drop Grate	0.40	0.00	0.40	0.00	-	-	1.00	1.00	1.00	Sag	2.00	0.020	0.020	0.013	0.10	12.28	0.10	12.28	0.10	12.28	0.10	12.28	0.10	12.28	0.10	0.0	0

Notes: Return Period = 1-yr. All curb inlets are Horiz throat.

Project File: Storm System 800.sws

# Inlet Report

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 800

07-22-2021

Line No	Inlet		Q				Curb			Grate			Gutter							Inlet			Byp Line No	
	Id	Type	Catch (cfs)	Carry (cfs)	Cap't (cfs)	Byp (cfs)	Ht (in)	L (ft)	L (ft)	W (ft)	Area (sqft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)		Depth (in)
23	YI-814	Drop Grate	1.87	0.00	1.87	0.00	-	1.00	1.00	1.00	1.00	Sag	2.00	0.020	0.020	0.013	0.29	30.96	0.29	30.96	0.29	30.96	0.0	0
24	CB-803	Combination	1.12	0.23	0.98	0.37	3.0	3.00	2.00	-	0.006	2.00	0.040	0.020	0.013	0.20	7.90	0.32	5.48	0.32	7.90	2.5	0	
25	CB-831	Combination	0.76	0.01	0.64	0.13	3.0	3.00	2.00	-	0.009	2.00	0.040	0.020	0.013	0.15	5.60	0.24	1.96	0.24	5.60	2.5	2	
26	CB-832	Combination	0.34	0.00	0.33	0.01	3.0	3.00	2.00	-	0.009	2.00	0.040	0.020	0.013	0.12	3.80	0.18	1.44	0.18	3.80	2.5	1	
27	CB-819	Combination	0.63	0.04	0.58	0.09	3.0	3.00	2.00	-	0.011	2.00	0.040	0.020	0.013	0.14	5.05	0.22	1.80	0.22	5.05	2.5	0	
28	CB-821	Combination	0.36	0.11	0.43	0.04	3.0	3.00	2.00	-	0.011	2.00	0.040	0.020	0.013	0.13	4.25	0.20	1.58	0.20	4.25	2.5	27	
29	CB-833	Combination	0.31	0.00	0.29	0.01	3.0	3.00	2.00	-	0.010	2.00	0.040	0.020	0.013	0.11	3.50	0.17	1.38	0.17	3.50	2.5	25	
30	DI-838	Drop Grate	0.13	0.00	0.13	0.00	-	2.00	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.03	5.08	0.03	5.08	0.03	5.08	0.0	0	
31	DI-839	Drop Grate	0.13	0.00	0.13	0.00	-	2.00	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.03	5.08	0.03	5.08	0.03	5.08	0.0	0	
32	CB-840	Combination	0.66	0.01	0.57	0.09	3.0	3.00	2.00	-	0.010	2.00	0.040	0.020	0.013	0.15	5.25	0.23	1.85	0.23	5.25	2.5	33	
33	CB-855	Combination	1.01	0.09	1.10	0.00	3.0	3.00	2.00	6.00	Sag	2.00	0.040	0.020	0.013	0.11	3.29	0.27	3.29	0.27	3.29	2.5	0	
34	CB-859	Combination	0.65	0.14	0.64	0.14	3.0	3.00	2.00	-	0.006	2.00	0.040	0.020	0.013	0.16	6.15	0.26	2.73	0.26	6.15	2.5	35	
35	CB-860	Combination	0.65	0.25	0.89	0.00	3.0	3.00	2.00	0.20	Sag	2.00	0.040	0.020	0.013	0.25	10.29	0.41	10.29	0.41	10.29	2.5	0	
36	DI-861	Drop Grate	0.84	0.00	0.84	0.00	-	2.00	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.11	12.69	0.11	12.69	0.11	12.69	0.0	0	
37	DI-862	Drop Grate	0.51	0.00	0.51	0.00	-	2.00	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.08	9.62	0.08	9.62	0.08	9.62	0.0	0	
38	CB-856	Combination	0.27	0.00	0.27	0.00	3.0	3.00	2.00	-	0.017	2.00	0.040	0.020	0.013	0.10	2.80	0.15	1.18	0.15	2.80	2.5	33	
39	DI-858	Drop Grate	0.22	0.00	0.22	0.00	-	2.00	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.04	6.43	0.04	6.43	0.04	6.43	0.0	0	
40	DI-863	Drop Grate	0.59	0.00	0.59	0.00	-	2.00	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.08	10.48	0.08	10.48	0.08	10.48	0.0	0	
41	DI-864	Drop Grate	0.65	0.00	0.65	0.00	-	2.00	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.09	11.01	0.09	11.01	0.09	11.01	0.0	0	
42	CB-857	Combination	0.84	0.05	0.76	0.14	3.0	3.00	2.00	-	0.017	2.00	0.040	0.020	0.013	0.15	5.25	0.23	1.85	0.23	5.25	2.5	34	
43	CB-841	Combination	0.69	0.00	0.59	0.10	3.0	3.00	2.00	-	0.010	2.00	0.040	0.020	0.013	0.15	5.30	0.23	1.88	0.23	5.30	2.5	35	
44	CB-843	Combination	0.43	0.00	0.43	0.00	3.0	3.00	2.00	-	0.045	2.00	0.040	0.020	0.013	0.10	2.80	0.15	1.18	0.15	2.80	2.5	43	

Notes: Return Period = 1-yr. All curb inlets are Horiz throat.

Project File: Storm System 800.sws

# Inlet Report

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 800

07-22-2021

Line No	Inlet		Q				Curb			Grate			Gutter							Inlet			Byp Line No
	Id	Type	Catch (cfs)	Carry (cfs)	Capt (cfs)	Byp (cfs)	Ht (in)	L (ft)	L (ft)	W (ft)	Area (sqft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	
45	CB-844	Combination	0.45	0.01	0.46	0.01	3.0	3.00	2.00	-	0.045	2.00	0.040	0.020	0.013	0.10	2.90	0.15	1.21	2.5	32		
46	YI-845	Drop Grate	0.27	0.00	0.27	0.00	-	1.00	1.00	1.00	Sag	2.00	0.020	0.020	0.013	0.08	9.96	0.08	9.96	0.0	0		
47	CB-846	Combination	0.36	0.00	0.36	0.00	3.0	3.00	2.00	-	0.045	2.00	0.040	0.020	0.013	0.09	2.50	0.14	1.11	2.5	44		
48	CB-850	Combination	0.11	0.00	0.11	0.00	3.0	3.00	2.00	-	0.025	2.00	0.040	0.020	0.013	0.06	1.62	0.10	0.80	2.5	47		
49	CB-853	Combination	0.10	0.00	0.10	0.00	3.0	3.00	2.00	-	0.015	2.00	0.040	0.020	0.013	0.07	1.72	0.11	0.85	2.5	48		
50	CB-854	Combination	0.09	0.00	0.09	0.00	3.0	3.00	2.00	-	0.003	2.00	0.040	0.020	0.013	0.09	2.40	0.13	1.08	2.5	49		
51	CB-851	Combination	0.16	0.00	0.16	0.00	3.0	3.00	2.00	-	0.025	2.00	0.040	0.020	0.013	0.07	1.82	0.11	0.90	2.5	55		
52	YI-852	Drop Grate	0.45	0.00	0.45	0.00	-	1.00	1.00	1.00	Sag	2.00	0.020	0.020	0.013	0.11	13.16	0.11	13.16	0.0	0		
53	CB-823	Combination	0.66	0.00	0.57	0.09	3.0	3.00	2.00	-	0.011	2.00	0.040	0.020	0.013	0.14	5.00	0.22	1.79	2.5	17		
54	CB-824	Combination	0.63	0.00	0.55	0.08	3.0	3.00	2.00	-	0.011	2.00	0.040	0.020	0.013	0.14	4.90	0.22	1.76	2.5	18		
55	CB-847	Combination	0.57	0.00	0.56	0.01	3.0	3.00	2.00	-	0.045	2.00	0.040	0.020	0.013	0.11	3.30	0.16	1.31	2.5	45		
56	YI-848	Drop Grate	0.05	0.00	0.05	0.00	-	1.00	1.00	1.00	Sag	2.00	0.020	0.020	0.013	0.03	4.52	0.03	4.52	0.0	0		
57	YI-849	Drop Grate	0.24	0.00	0.24	0.00	-	1.00	1.00	1.00	Sag	2.00	0.020	0.020	0.013	0.07	9.36	0.07	9.36	0.0	0		
58	DI-809	Drop Grate	0.08	0.00	0.08	0.00	-	2.00	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.02	4.19	0.02	4.19	0.0	0		
59	CB-827	Combination	0.29	0.00	0.29	0.00	3.0	3.00	2.00	0.18	Sag	2.00	0.040	0.020	0.013	0.06	1.40	0.22	1.81	2.5	0		
60	CB-834	Combination	0.10	0.00	0.10	0.00	3.0	3.00	2.00	-	1.000	2.00	0.040	0.020	0.013	0.03	0.80	0.05	0.39	2.5	26		
61	CB-835	Combination	0.20	0.00	0.20	0.00	3.0	3.00	2.00	-	0.010	2.00	0.040	0.020	0.013	0.10	2.80	0.15	1.18	2.5	60		
62	CB-836	Combination	0.48	0.00	0.48	0.00	3.0	3.00	2.00	0.29	Sag	2.00	0.040	0.020	0.013	0.06	1.40	0.22	1.81	2.5	0		

Notes: Return Period = 1-yr. All curb inlets are Horiz throat.

Project File: Storm System 800.sws

# Inlet Report

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 900

07-20-2021

Line No	Inlet		Q				Curb		Grate			Gutter							Inlet			Byp Line No		
	Id	Type	Catch (cfs)	Carry (cfs)	Cap't (cfs)	Byp (cfs)	Ht (in)	L (ft)	L (ft)	W (ft)	Area (sqft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depth (ft)		Spread (ft)	Depr (in)
1	CB-901	Combination	0.51	0.02	0.53	0.00	3.0	3.00	3.00	2.00	3.22	Sag	2.00	0.040	0.020	0.013	0.05	1.15	0.21	1.72	0.21	1.72	2.5	0
2	CB-902	Combination	0.39	0.02	0.41	0.00	3.0	3.00	3.00	2.00	3.22	Sag	2.00	0.040	0.020	0.013	0.04	0.90	0.20	1.64	0.20	1.64	2.5	0
3	CB-903	Combination	0.17	0.00	0.17	0.00	3.0	3.00	3.00	2.00	-	0.008	2.00	0.040	0.020	0.013	0.09	2.65	0.14	1.15	0.14	1.15	2.5	2
4	CB-904	Combination	0.45	0.00	0.45	0.00	3.0	3.00	3.00	2.00	-	0.048	2.00	0.040	0.020	0.013	0.10	2.80	0.15	1.18	0.15	1.18	2.5	3
5	CB-905	Combination	0.16	0.00	0.16	0.00	3.0	3.00	3.00	2.00	-	0.048	2.00	0.040	0.020	0.013	0.07	1.65	0.10	0.81	0.10	0.81	2.5	0
6	CB-906	Combination	0.52	0.00	0.49	0.03	3.0	3.00	3.00	2.00	-	0.024	2.00	0.040	0.020	0.013	0.11	3.70	0.18	1.43	0.18	1.43	2.5	0
7	CB-907	Combination	0.57	0.00	0.53	0.04	3.0	3.00	3.00	2.00	-	0.024	2.00	0.040	0.020	0.013	0.12	3.90	0.18	1.47	0.18	1.47	2.5	0
8	CB-915	Combination	0.39	0.00	0.37	0.02	3.0	3.00	3.00	2.00	-	0.011	2.00	0.040	0.020	0.013	0.12	3.85	0.18	1.47	0.18	1.47	2.5	2
9	CB-920	Combination	0.45	0.00	0.44	0.01	3.0	3.00	3.00	2.00	-	0.036	2.00	0.040	0.020	0.013	0.10	3.05	0.16	1.25	0.16	1.25	2.5	0
10	CB-921	Combination	0.53	0.00	0.51	0.02	3.0	3.00	3.00	2.00	-	0.036	2.00	0.040	0.020	0.013	0.11	3.35	0.17	1.33	0.17	1.33	2.5	1
11	CB-922	Combination	0.30	0.01	0.31	0.00	3.0	3.00	3.00	2.00	-	0.047	2.00	0.040	0.020	0.013	0.08	2.20	0.13	1.03	0.13	1.03	2.5	9
12	CB-924	Combination	0.50	0.01	0.51	0.01	3.0	3.00	3.00	2.00	-	0.047	2.00	0.040	0.020	0.013	0.10	3.05	0.16	1.25	0.16	1.25	2.5	11
13	CB-928	Combination	0.22	0.08	0.30	0.00	3.0	3.00	3.00	2.00	-	0.020	2.00	0.040	0.020	0.013	0.10	2.85	0.15	1.19	0.15	1.19	2.5	12
14	CB-931	Combination	0.38	0.01	0.39	0.01	3.0	3.00	3.00	2.00	-	0.020	2.00	0.040	0.020	0.013	0.11	3.35	0.16	1.32	0.16	1.32	2.5	12
15	CB-932	Combination	0.24	0.01	0.25	0.00	3.0	3.00	3.00	2.00	-	0.047	2.00	0.040	0.020	0.013	0.08	1.95	0.12	0.96	0.12	0.96	2.5	12
16	CB-934	Combination	0.47	0.04	0.49	0.01	3.0	3.00	3.00	2.00	-	0.040	2.00	0.040	0.020	0.013	0.10	3.15	0.16	1.28	0.16	1.28	2.5	15
17	CB-937	Combination	0.63	0.32	0.84	0.11	3.0	3.00	3.00	2.00	-	0.040	2.00	0.040	0.020	0.013	0.13	4.40	0.20	1.62	0.20	1.62	2.5	30
18	DI-938	Drop Grate	0.05	0.00	0.05	0.00	-	-	2.00	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.02	3.71	0.02	3.71	0.02	3.71	0.0	0
19	YI-939	Drop Grate	0.44	0.00	0.44	0.00	-	-	1.00	1.00	1.00	Sag	2.00	0.020	0.020	0.013	0.11	13.02	0.11	13.02	0.11	13.02	0.0	0
20	YI-940	Drop Grate	0.31	0.00	0.31	0.00	-	-	1.00	1.00	1.00	Sag	2.00	0.020	0.020	0.013	0.09	10.69	0.09	10.69	0.09	10.69	0.0	0
21	CB-923	Combination	0.24	0.02	0.26	0.00	3.0	3.00	3.00	2.00	-	0.047	2.00	0.040	0.020	0.013	0.08	1.95	0.12	0.97	0.12	0.97	2.5	10
22	CB-941	Combination	0.34	0.21	0.51	0.04	3.0	3.00	3.00	2.00	-	0.023	2.00	0.040	0.020	0.013	0.12	3.85	0.18	1.47	0.18	1.47	2.5	16

Notes: Return Period = 1-yr. All curb inlets are Horiz throat.

Project File: Storm System 900.sws

# Inlet Report

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 900

07-20-2021

Line No	Inlet		Q				Curb			Grate			Gutter							Inlet			Byp Line No
	Id	Type	Catch (cfs)	Carry (cfs)	Capt (cfs)	Byp (cfs)	Ht (in)	L (ft)	L (ft)	W (ft)	Area (sqft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	
23	CB-942	Combination	1.41	0.00	1.09	0.32	3.0	3.00	3.00	2.00	-	0.023	2.00	0.040	0.020	0.013	0.16	6.05	0.26	2.53	2.5	17	
24	CB-908	Combination	0.17	0.00	0.17	0.00	3.0	3.00	3.00	2.00	-	0.048	2.00	0.040	0.020	0.013	0.07	1.67	0.10	0.82	2.5	0	
25	DI-909	Drop Grate	1.79	0.00	1.79	0.00	-	-	2.00	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.18	19.73	0.18	19.73	0.0	0	
26	CB-925	Combination	0.51	0.04	0.53	0.02	3.0	3.00	3.00	2.00	-	0.047	2.00	0.040	0.020	0.013	0.10	3.15	0.16	1.28	2.5	21	
27	DI-926	Drop Grate	0.27	0.00	0.27	0.00	-	-	2.00	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.05	7.01	0.05	7.01	0.0	0	
28	YI-927	Drop Grate	0.36	0.00	0.36	0.00	-	-	1.00	1.00	1.00	Sag	2.00	0.020	0.020	0.013	0.10	11.64	0.10	11.64	0.0	0	
29	DI-935	Drop Grate	2.13	0.00	2.13	0.00	-	-	2.00	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.20	21.89	0.20	21.89	0.0	0	
30	CB-933	Combination	0.60	0.11	0.67	0.04	3.0	3.00	3.00	2.00	-	0.047	2.00	0.040	0.020	0.013	0.11	3.65	0.18	1.41	2.5	26	
31	CB-910	Combination	0.31	0.01	0.31	0.00	3.0	3.00	3.00	2.00	-	0.048	2.00	0.040	0.020	0.013	0.08	2.20	0.13	1.03	2.5	0	
32	CB-911	Combination	0.39	0.08	0.47	0.00	3.0	3.00	3.00	2.00	-	0.048	2.00	0.040	0.020	0.013	0.10	2.90	0.15	1.21	2.5	4	
33	CB-912	Combination	0.90	0.00	0.82	0.08	3.0	3.00	3.00	2.00	-	0.048	2.00	0.040	0.020	0.013	0.12	4.10	0.19	1.53	2.5	32	
34	CB-913	Combination	0.54	0.00	0.54	0.01	3.0	3.00	3.00	2.00	-	0.048	2.00	0.040	0.020	0.013	0.10	3.15	0.16	1.27	2.5	31	
35	DI-914	Drop Grate	2.09	0.00	2.09	0.00	-	-	2.00	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.20	21.62	0.20	21.62	0.0	0	
36	CB-929	Combination	0.84	0.00	0.76	0.08	3.0	3.00	3.00	2.00	-	0.037	2.00	0.040	0.020	0.013	0.13	4.25	0.20	1.57	2.5	13	
37	CB-930	Combination	0.51	0.00	0.50	0.01	3.0	3.00	3.00	2.00	-	0.037	2.00	0.040	0.020	0.013	0.11	3.25	0.16	1.30	2.5	14	
38	CB-943	Combination	0.66	0.00	0.57	0.09	3.0	3.00	3.00	2.00	-	0.012	2.00	0.040	0.020	0.013	0.14	4.95	0.22	1.77	2.5	22	
39	CB-944	Combination	0.60	0.00	0.53	0.07	3.0	3.00	3.00	2.00	-	0.012	2.00	0.040	0.020	0.013	0.14	4.75	0.21	1.72	2.5	22	
40	CB-945	Combination	0.54	0.00	0.49	0.05	3.0	3.00	3.00	2.00	-	0.014	2.00	0.040	0.020	0.013	0.13	4.35	0.20	1.60	2.5	22	
41	CB-946	Combination	0.28	0.00	0.28	0.00	3.0	3.00	3.00	2.00	3.22	Sag	2.00	0.040	0.020	0.013	0.02	0.40	0.18	1.48	2.5	0	
42	CB-947	Combination	0.31	0.00	0.31	0.00	3.0	3.00	3.00	2.00	3.22	Sag	2.00	0.040	0.020	0.013	0.02	0.40	0.18	1.48	2.5	0	
43	DI-948	Drop Grate	0.70	0.00	0.70	0.00	-	-	2.00	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.09	11.43	0.09	11.43	0.0	0	
44	YI-949	Drop Grate	0.97	0.00	0.97	0.00	-	-	1.00	1.00	1.00	Sag	2.00	0.020	0.020	0.013	0.19	20.65	0.19	20.65	0.0	0	

Notes: Return Period = 1-yrs. All curb inlets are Horiz throat.

# Inlet Report

Project Name: Storm System 900

Stormwater Studio 2021 v 3.0.0.25

07-20-2021

Line No	Inlet		Q				Curb		Grate			Gutter						Inlet			Byp Line No			
	Id	Type	Catch (cfs)	Carry (cfs)	Capt (cfs)	Byp (cfs)	Ht (in)	L (ft)	L (ft)	W (ft)	Area (sqft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)		Depth (ft)	Spread (ft)	Depr (in)
45	DI-916	Drop Grate	0.65	0.00	0.65	0.00	-	-	2.00	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.09	11.01	0.09	11.01	0.09	11.01	0.0	0
46	JB-917	Manhole	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47	DI-918	Drop Grate	2.82	0.00	2.82	0.00	-	-	2.00	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.24	25.95	0.24	25.95	0.24	25.95	0.0	0
48	DI-919	Drop Grate	1.94	0.00	1.94	0.00	-	-	2.00	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.19	20.70	0.19	20.70	0.19	20.70	0.0	0

Notes: Return Period = 1-yrs.,

Project File: Storm System 900.sws

# Inlet Report

Project Name: Storm System 1000  
07-20-2021

Stormwater Studio 2021 v 3.0.0.25

Line No	Inlet		Q				Curb		Grate			Gutter						Inlet			Byp Line No			
	Id	Type	Catch (cfs)	Carry (cfs)	Capt (cfs)	Byp (cfs)	Ht (in)	L (ft)	L (ft)	W (ft)	Area (sqft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)		Depth (ft)	Spread (ft)	Depth (ft)
1	DI-1001	Drop Grate	0.83	0.00	0.83	0.00	-	-	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.11	12.62	0.11	12.62	0.11	12.62	0.11	12.62	0.0
2	CB-1003	Combination	0.60	0.00	0.59	0.01	3.0	3.00	3.00	-	0.049	2.00	0.040	0.020	0.013	0.11	3.30	0.16	3.30	0.16	3.30	0.16	3.30	0
3	CB-1004	Combination	0.13	0.00	0.13	0.00	3.0	3.00	3.00	-	0.049	2.00	0.040	0.020	0.013	0.06	1.50	0.09	1.50	0.09	1.50	0.09	1.50	0
4	CB-1005	Combination	0.27	0.00	0.27	0.00	3.0	3.00	3.00	-	0.049	2.00	0.040	0.020	0.013	0.08	1.98	0.12	1.98	0.12	1.98	0.12	1.98	3
5	CB-1006	Combination	0.18	0.00	0.18	0.00	3.0	3.00	3.00	-	0.019	2.00	0.040	0.020	0.013	0.08	2.10	0.13	2.10	0.13	2.10	0.13	2.10	4
6	CB-1008	Combination	0.66	0.00	0.66	0.00	3.0	3.00	3.00	6.00	Sag	2.00	0.040	0.020	0.013	0.14	5.00	0.14	5.00	0.14	5.00	0.14	5.00	0
7	CB-1010	Combination	0.21	0.00	0.21	0.00	3.0	3.00	3.00	-	0.022	2.00	0.040	0.020	0.013	0.08	2.20	0.13	2.20	0.13	2.20	0.13	2.20	6
8	CB-1011	Combination	0.20	0.00	0.20	0.00	3.0	3.00	3.00	-	0.043	2.00	0.040	0.020	0.013	0.07	1.82	0.11	1.82	0.11	1.82	0.11	1.82	7
9	CB-1012	Combination	0.34	0.00	0.34	0.00	3.0	3.00	3.00	-	0.043	2.00	0.040	0.020	0.013	0.09	2.45	0.14	2.45	0.14	2.45	0.14	2.45	29
10	CB-1013	Combination	0.14	0.00	0.14	0.00	3.0	3.00	3.00	-	0.043	2.00	0.040	0.020	0.013	0.06	1.57	0.10	1.57	0.10	1.57	0.10	1.57	0
11	CB-1014	Combination	0.13	0.00	0.13	0.00	3.0	3.00	3.00	-	0.043	2.00	0.040	0.020	0.013	0.06	1.55	0.09	1.55	0.09	1.55	0.09	1.55	9
12	CB-1015	Combination	0.15	0.05	0.20	0.00	3.0	3.00	3.00	-	0.015	2.00	0.040	0.020	0.013	0.09	2.45	0.14	2.45	0.14	2.45	0.14	2.45	0
13	CB-1016	Combination	0.60	0.00	0.56	0.04	3.0	3.00	3.00	-	0.030	2.00	0.040	0.020	0.013	0.12	3.75	0.18	3.75	0.18	3.75	0.18	3.75	12
14	CB-1017	Combination	0.54	0.00	0.51	0.03	3.0	3.00	3.00	-	0.030	2.00	0.040	0.020	0.013	0.11	3.55	0.11	3.55	0.11	3.55	0.11	3.55	0
15	CB-1018	Combination	0.36	0.00	0.34	0.02	3.0	3.00	3.00	-	0.011	2.00	0.040	0.020	0.013	0.11	3.70	0.11	3.70	0.11	3.70	0.11	3.70	12
16	CB-1019	Combination	0.24	0.00	0.24	0.00	3.0	3.00	3.00	-	0.011	2.00	0.040	0.020	0.013	0.10	2.95	0.10	2.95	0.10	2.95	0.10	2.95	10
17	CB-1020	Combination	0.04	0.00	0.04	0.00	3.0	3.00	3.00	-	0.008	2.00	0.040	0.020	0.013	0.05	1.32	0.05	1.32	0.05	1.32	0.05	1.32	15
18	CB-1021	Combination	0.99	0.05	1.04	0.00	3.0	3.00	3.00	6.00	Sag	2.00	0.040	0.020	0.013	0.18	7.00	0.18	7.00	0.18	7.00	0.18	7.00	0
19	CB-1022	Combination	0.31	0.07	0.38	0.00	3.0	3.00	3.00	6.00	Sag	2.00	0.040	0.020	0.013	0.11	3.50	0.11	3.50	0.11	3.50	0.11	3.50	0
20	CB-1023	Combination	0.45	0.21	0.58	0.07	3.0	3.00	3.00	-	0.015	2.00	0.040	0.020	0.013	0.13	4.70	0.13	4.70	0.13	4.70	0.13	4.70	19
21	CB-1024	Combination	0.54	0.00	0.49	0.05	3.0	3.00	3.00	-	0.015	2.00	0.040	0.020	0.013	0.13	4.25	0.13	4.25	0.13	4.25	0.13	4.25	18
22	DI-1025	Drop Grate	0.75	0.00	0.75	0.00	-	-	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.10	11.94	0.10	11.94	0.10	11.94	0.10	11.94	0

Notes: Return Period = 1-yr. All curb inlets are Horiz throat., Project File: Storm System 1000.sws

# Inlet Report

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 1000

07-20-2021

Line No	Inlet		Q				Curb		Grate			Gutter						Inlet			Byp Line No				
	Id	Type	Catch (cfs)	Carry (cfs)	Capt (cfs)	Byp (cfs)	Ht (in)	L (ft)	L (ft)	W (ft)	Area (sqft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)		Depth (ft)	Spread (ft)	Depth (in)	
23	DI-1026	Drop Grate	0.26	0.00	0.26	0.00	-	-	2.00	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.05	6.89	0.05	6.89	0.05	6.89	0.05	0.0	0
24	DI-1027	Drop Grate	1.35	0.00	1.35	0.00	-	-	2.00	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.15	16.68	0.15	16.68	0.15	16.68	0.15	0.0	0
25	CB-1028	Combination	0.87	0.18	0.84	0.21	3.0	3.00	3.00	2.00	-	0.015	2.00	0.040	0.020	0.013	0.16	5.80	0.16	5.80	0.16	5.80	0.16	20	
26	CB-1029	Combination	0.75	0.00	0.66	0.09	3.0	3.00	3.00	2.00	-	0.017	2.00	0.040	0.020	0.013	0.14	4.85	0.14	4.85	0.14	4.85	0.14	25	
27	CB-1030	Combination	0.72	0.00	0.63	0.09	3.0	3.00	3.00	2.00	-	0.017	2.00	0.040	0.020	0.013	0.14	4.75	0.14	4.75	0.14	4.75	0.14	25	
28	CB-1007	Combination	0.15	0.00	0.15	0.00	3.0	3.00	3.00	2.00	-	0.019	2.00	0.040	0.020	0.013	0.08	1.90	0.08	1.90	0.08	1.90	0.08	2	
29	CB-1009	Combination	1.02	0.00	1.02	0.00	3.0	3.00	3.00	2.00	6.00	Sag	2.00	0.040	0.020	0.013	0.18	7.00	0.18	7.00	0.18	7.00	0.18	0	

Notes: Return Period = 1-yr. All curb inlets are Horiz throat.

Project File: Storm System 1000.sws

# Inlet Report

Project Name: Storm System 1100

Stormwater Studio 2021 v 3.0.0.25

07-20-2021

Line No	Inlet		Q				Curb		Grate			Gutter						Inlet			Byp Line No	
	Id	Type	Catch (cfs)	Carry (cfs)	Capt (cfs)	Byp (cfs)	Ht (in)	L (ft)	L (ft)	W (ft)	Area (sqft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)		Depth (ft)
1	CB-1101	Combination	0.31	0.00	0.31	0.00	3.0	3.00	3.00	2.00	-	0.037	2.00	0.040	0.020	0.013	0.09	2.35	0.13	1.07	2.5	4
2	CB-1102	Combination	0.66	0.00	0.62	0.04	3.0	3.00	3.00	2.00	-	0.037	2.00	0.040	0.020	0.013	0.12	3.75	0.18	1.43	2.5	3
3	CB-1103	Combination	0.16	0.04	0.20	0.00	3.0	3.00	3.00	2.00	-	0.027	2.00	0.040	0.020	0.013	0.08	2.00	0.12	0.97	2.5	0
4	CB-1104	Combination	0.16	0.00	0.16	0.00	3.0	3.00	3.00	2.00	-	0.027	2.00	0.040	0.020	0.013	0.07	1.85	0.11	0.91	2.5	0
5	DI-1105	Drop Grate	2.62	0.00	2.62	0.00	-	2.00	2.00	2.00	4.00	Sag	2.00	0.020	0.020	0.013	0.23	24.80	0.23	24.80	0.0	0

Notes: Return Period = 1-yr. All curb inlets are Horiz throat.

Project File: Storm System 1100.sws

# Inlet Report

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 1200

07-20-2021

Line No	Inlet		Q				Curb		Grate			Gutter						Inlet			Byp Line No			
	Id	Type	Catch (cfs)	Carry (cfs)	Capt (cfs)	Byp (cfs)	Ht (in)	L (ft)	L (ft)	W (ft)	Area (sqft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)		Depth (ft)	Spread (ft)	Depr (in)
1	DI-1201	Drop Grate	1.07	0.00	1.07	0.00	-	-	2.00	2.00	3.67	Sag	2.00	0.042	0.020	0.013	0.13	14.53	0.13	14.53	0.13	14.53	0.0	0
2	DI-1202	Drop Grate	1.64	0.00	1.64	0.00	-	-	2.00	2.00	3.67	Sag	2.00	0.042	0.020	0.013	0.17	18.69	0.17	18.69	0.17	18.69	0.0	0
3	DI-1203	Drop Grate	0.44	0.00	0.44	0.00	-	-	2.00	2.00	3.67	Sag	2.00	0.042	0.020	0.013	0.07	8.96	0.07	8.96	0.07	8.96	0.0	0
4	DI-1204	Drop Grate	0.44	0.00	0.44	0.00	-	-	2.00	2.00	3.67	Sag	2.00	0.042	0.020	0.013	0.07	8.96	0.07	8.96	0.07	8.96	0.0	0
5	DI-1205	Drop Grate	0.44	0.00	0.44	0.00	-	-	2.00	2.00	0.27	Sag	2.00	0.042	0.020	0.013	0.09	11.29	0.09	11.29	0.09	11.29	0.0	0
6	DI-1206	Drop Grate	0.44	0.00	0.44	0.00	-	-	2.00	2.00	0.27	Sag	2.00	0.042	0.020	0.013	0.09	11.29	0.09	11.29	0.09	11.29	0.0	0
7	DI-1207	Drop Grate	0.44	0.00	0.44	0.00	-	-	2.00	2.00	3.67	Sag	2.00	0.042	0.020	0.013	0.07	8.96	0.07	8.96	0.07	8.96	0.0	0
8	DI-1208	Drop Grate	0.42	0.00	0.42	0.00	-	-	2.00	2.00	3.67	Sag	2.00	0.042	0.020	0.013	0.07	8.69	0.07	8.69	0.07	8.69	0.0	0
9	DI-1209	Drop Grate	1.85	0.00	1.85	0.00	-	-	2.00	2.00	3.67	Sag	2.00	0.042	0.020	0.013	0.18	20.07	0.18	20.07	0.18	20.07	0.0	0

Notes: Return Period = 1-yr.,

Project File: Storm System 1200.sws

# Inlet Report

Project Name: Storm System 1300

Stormwater Studio 2021 v 3.0.0.25

07-20-2021

Line No	Inlet		Q				Curb		Grate			Gutter						Inlet			Byp Line No		
	Id	Type	Catch (cfs)	Carry (cfs)	Capt (cfs)	Byp (cfs)	Ht (in)	L (ft)	L (ft)	W (ft)	Area (sqft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)		Depth (ft)	Depr (in)
1	DI-1301	Drop Grate	1.23	0.00	1.23	0.00	-	-	2.00	2.00	4.00	Sag	2.00	0.040	0.020	0.013	0.14	15.80	0.14	15.80	0.14	15.80	0.0

Notes: Return Period = 1-yr.,

Project File: Storm System 1300.sws

# Inlet Report

Project Name: Storm System 1400  
07-23-2021

Stormwater Studio 2021 v 3.0.0.25

Line No	Inlet		Q				Curb			Grate			Gutter							Inlet			Byp Line No
	Id	Type	Catch (cfs)	Carry (cfs)	Cap't (cfs)	Byp (cfs)	Ht (in)	L (ft)	L (ft)	W (ft)	Area (sqft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	
1	CB-1404	Combination	0.07	0.00	0.07	0.00	3.0	3.00	3.00	2.00	-	0.011	2.00	0.042	0.020	0.013	0.06	1.52	0.10	0.77	2.5	36	
2	CB-1405	Combination	0.24	0.16	0.38	0.02	3.0	3.00	3.00	2.00	-	0.011	2.00	0.042	0.020	0.013	0.12	3.85	0.18	1.48	2.5	35	
3	CB-1418	Combination	0.69	0.21	0.74	0.16	3.0	3.00	3.00	2.00	-	0.011	2.00	0.042	0.020	0.013	0.16	5.70	0.25	2.08	2.5	2	
4	CB-1422	Combination	0.20	0.00	0.20	0.00	3.0	3.00	3.00	2.00	-	0.011	2.00	0.042	0.020	0.013	0.09	2.50	0.14	1.14	2.5	26	
5	CB-1423	Combination	0.11	0.01	0.12	0.00	3.0	3.00	3.00	2.00	-	0.011	2.00	0.042	0.020	0.013	0.08	1.88	0.12	0.95	2.5	4	
6	CB-1430	Combination	0.34	0.00	0.33	0.01	3.0	3.00	3.00	2.00	-	0.011	2.00	0.042	0.020	0.013	0.11	3.50	0.17	1.39	2.5	5	
7	CB-1435	Combination	0.34	0.00	0.33	0.01	3.0	3.00	3.00	2.00	-	0.010	2.00	0.042	0.020	0.013	0.12	3.65	0.18	1.43	2.5	3	
8	CB-1437	Combination	0.70	0.02	0.62	0.10	3.0	3.00	3.00	2.00	-	0.011	2.00	0.042	0.020	0.013	0.15	5.20	0.23	1.86	2.5	3	
9	CB-1439	Combination	0.38	0.00	0.37	0.02	3.0	3.00	3.00	2.00	-	0.011	2.00	0.042	0.020	0.013	0.12	3.80	0.18	1.47	2.5	8	
10	CB-1442	Combination	0.22	0.00	0.22	0.00	3.0	3.00	3.00	2.00	-	0.011	2.00	0.042	0.020	0.013	0.10	2.75	0.15	1.20	2.5	9	
11	CB-1443	Combination	0.19	0.00	0.19	0.00	3.0	3.00	3.00	2.00	-	0.011	2.00	0.042	0.020	0.013	0.09	2.50	0.14	1.14	2.5	12	
12	CB-1440	Combination	0.45	0.00	0.42	0.03	3.0	3.00	3.00	2.00	-	0.011	2.00	0.042	0.020	0.013	0.13	4.10	0.19	1.55	2.5	14	
13	DI-1441	Drop Grate	2.64	0.00	2.64	0.00	-	2.00	2.00	2.00	3.67	Sag	2.00	0.020	0.020	0.013	0.23	24.94	0.23	24.94	0.0	0	
14	CB-1438	Combination	0.70	0.03	0.63	0.10	3.0	3.00	3.00	2.00	-	0.011	2.00	0.042	0.020	0.013	0.15	5.25	0.23	1.87	2.5	3	
15	CB-1424	Combination	0.14	0.00	0.14	0.00	3.0	3.00	3.00	2.00	-	0.018	2.00	0.042	0.020	0.013	0.08	1.83	0.12	0.93	2.5	16	
16	CB-1425	Combination	0.93	0.00	0.93	0.00	3.0	3.00	3.00	2.00	3.22	Sag	2.00	0.042	0.020	0.013	0.09	2.29	0.25	2.29	2.5	0	
17	CB-1427	Combination	0.11	0.00	0.11	0.00	3.0	3.00	3.00	2.00	-	0.013	2.00	0.042	0.020	0.013	0.07	1.74	0.11	0.89	2.5	16	
18	CB-1428	Combination	0.39	0.00	0.37	0.02	3.0	3.00	3.00	2.00	-	0.013	2.00	0.042	0.020	0.013	0.12	3.65	0.18	1.43	2.5	25	
19	CB-1427A	Combination	0.58	0.00	0.58	0.00	3.0	3.00	3.00	2.00	3.22	Sag	2.00	0.042	0.020	0.013	0.06	1.42	0.22	1.81	2.5	0	
20	DI-1431	Drop Grate	0.22	0.00	0.22	0.00	-	2.00	2.00	2.00	3.67	Sag	2.00	0.020	0.020	0.013	0.04	6.32	0.04	6.32	0.0	0	
21	DI-1432	Drop Grate	1.37	0.00	1.37	0.00	-	2.00	2.00	2.00	3.67	Sag	2.00	0.020	0.020	0.013	0.15	16.80	0.15	16.80	0.0	0	
22	DI-1434	Drop Grate	0.96	0.00	0.96	0.00	-	2.00	2.00	2.00	3.67	Sag	2.00	0.020	0.020	0.013	0.12	13.68	0.12	13.68	0.0	0	

Notes: Return Period = 1-yr. All curb inlets are Horiz throat.

# Inlet Report

Stormwater Studio 2021 v 3.0.0.25

Project Name: Storm System 1400

07-23-2021

Line No	Inlet		Q				Curb			Grate			Gutter							Inlet			Byp Line No							
	Id	Type	Catch (cfs)	Carry (cfs)	Capt (cfs)	Byp (cfs)	Ht (in)	L (ft)	L (ft)	W (ft)	Area (sqft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)		Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depth (ft)
23	DI-1436	Drop Grate	0.74	0.00	0.74	0.00	-	2.00	2.00	3.67	Sag	2.00	0.020	0.020	0.013	0.10	11.82	0.10	11.82	0.10	11.82	0.10	11.82	0.10	11.82	0.10	11.82	0.10	11.82	0.0
24	CB-1429	Combination	0.40	0.00	0.40	0.00	3.0	3.00	0.24	Sag	2.00	0.042	0.020	0.013	0.06	1.42	0.22	1.81	0.22	1.81	0.22	1.81	0.22	1.81	0.22	1.81	0.22	1.81	2.5	0
25	CB-1426	Combination	1.23	0.02	1.25	0.00	3.0	3.00	3.22	Sag	2.00	0.042	0.020	0.013	0.12	3.79	0.28	3.79	0.28	3.79	0.28	3.79	0.28	3.79	0.28	3.79	0.28	3.79	2.5	0
26	CB-1401	Combination	0.18	0.00	0.18	0.00	3.0	3.00	-	0.011	2.00	0.040	0.020	0.013	0.09	2.50	0.14	1.10	0.14	1.10	0.14	1.10	0.14	1.10	0.14	1.10	0.14	1.10	2.5	1
27	CB-1402	Combination	0.58	0.00	0.58	0.00	3.0	3.00	0.35	Sag	2.00	0.050	0.020	0.013	0.08	1.52	0.22	1.81	0.22	1.81	0.22	1.81	0.22	1.81	0.22	1.81	0.22	1.81	2.5	0
28	DI-1419	Drop Grate	0.42	0.00	0.42	0.00	-	2.00	3.67	Sag	2.00	0.020	0.020	0.013	0.07	8.69	0.07	8.69	0.07	8.69	0.07	8.69	0.07	8.69	0.07	8.69	0.07	8.69	0.0	0
29	DI-1420	Drop Grate	0.68	0.00	0.68	0.00	-	2.00	3.67	Sag	2.00	0.020	0.020	0.013	0.09	11.25	0.09	11.25	0.09	11.25	0.09	11.25	0.09	11.25	0.09	11.25	0.09	11.25	0.0	0
30	DI-1421	Drop Grate	0.49	0.00	0.49	0.00	-	2.00	3.67	Sag	2.00	0.020	0.020	0.013	0.08	9.50	0.08	9.50	0.08	9.50	0.08	9.50	0.08	9.50	0.08	9.50	0.08	9.50	0.0	0
31	CB-1408	Combination	0.19	0.00	0.19	0.00	3.0	3.00	-	0.011	2.00	0.042	0.020	0.013	0.09	2.50	0.14	1.14	0.14	1.14	0.14	1.14	0.14	1.14	0.14	1.14	0.14	1.14	2.5	35
32	CB-1409	Combination	0.38	0.00	0.37	0.01	3.0	3.00	-	0.014	2.00	0.042	0.020	0.013	0.12	3.55	0.18	1.41	0.18	1.41	0.18	1.41	0.18	1.41	0.18	1.41	0.18	1.41	2.5	37
33	CB-1410	Combination	0.42	0.00	0.40	0.02	3.0	3.00	-	0.014	2.00	0.042	0.020	0.013	0.12	3.70	0.18	1.45	0.18	1.45	0.18	1.45	0.18	1.45	0.18	1.45	0.18	1.45	2.5	38
34	DI-1411	Drop Grate	0.76	0.00	0.76	0.00	-	2.00	3.67	Sag	2.00	0.020	0.020	0.013	0.10	12.00	0.10	12.00	0.10	12.00	0.10	12.00	0.10	12.00	0.10	12.00	0.10	12.00	0.0	0
35	CB-1406	Combination	0.83	0.02	0.71	0.15	3.0	3.00	-	0.011	2.00	0.042	0.020	0.013	0.16	5.55	0.24	1.97	0.24	1.97	0.24	1.97	0.24	1.97	0.24	1.97	0.24	1.97	2.5	0
36	CB-1407	Combination	0.37	0.00	0.36	0.02	3.0	3.00	-	0.011	2.00	0.042	0.020	0.013	0.12	3.70	0.18	1.45	0.18	1.45	0.18	1.45	0.18	1.45	0.18	1.45	0.18	1.45	2.5	0
37	CB-1412	Combination	0.19	0.01	0.21	0.00	3.0	3.00	-	0.014	2.00	0.042	0.020	0.013	0.09	2.40	0.14	1.11	0.14	1.11	0.14	1.11	0.14	1.11	0.14	1.11	0.14	1.11	2.5	38
38	CB-1413	Combination	1.26	0.02	1.28	0.00	3.0	3.00	3.22	Sag	2.00	0.042	0.020	0.013	0.12	3.79	0.28	3.79	0.28	3.79	0.28	3.79	0.28	3.79	0.28	3.79	0.28	3.79	2.5	0
39	DI-1416	Drop Grate	0.29	0.00	0.29	0.00	-	2.00	3.67	Sag	2.00	0.020	0.020	0.013	0.05	7.31	0.05	7.31	0.05	7.31	0.05	7.31	0.05	7.31	0.05	7.31	0.05	7.31	0.0	0
40	DI-1417	Drop Grate	1.79	0.00	1.79	0.00	-	2.00	3.67	Sag	2.00	0.020	0.020	0.013	0.18	19.72	0.18	19.72	0.18	19.72	0.18	19.72	0.18	19.72	0.18	19.72	0.18	19.72	0.0	0
41	CB-1414	Combination	1.03	0.00	1.03	0.00	3.0	3.00	0.63	Sag	2.00	0.042	0.020	0.013	0.10	2.79	0.26	2.79	0.26	2.79	0.26	2.79	0.26	2.79	0.26	2.79	0.26	2.79	2.5	0
42	DI-1415	Drop Grate	0.64	0.00	0.64	0.00	-	2.00	3.67	Sag	2.00	0.020	0.020	0.013	0.09	10.90	0.09	10.90	0.09	10.90	0.09	10.90	0.09	10.90	0.09	10.90	0.09	10.90	0.0	0

Notes: Return Period = 1-yr. All curb inlets are Horiz throat.

Project File: Storm System 1400.sws

*GREENWAY CULVERT  
CALCULATIONS*

# Culvert Report

## Greenway Culvert - 5

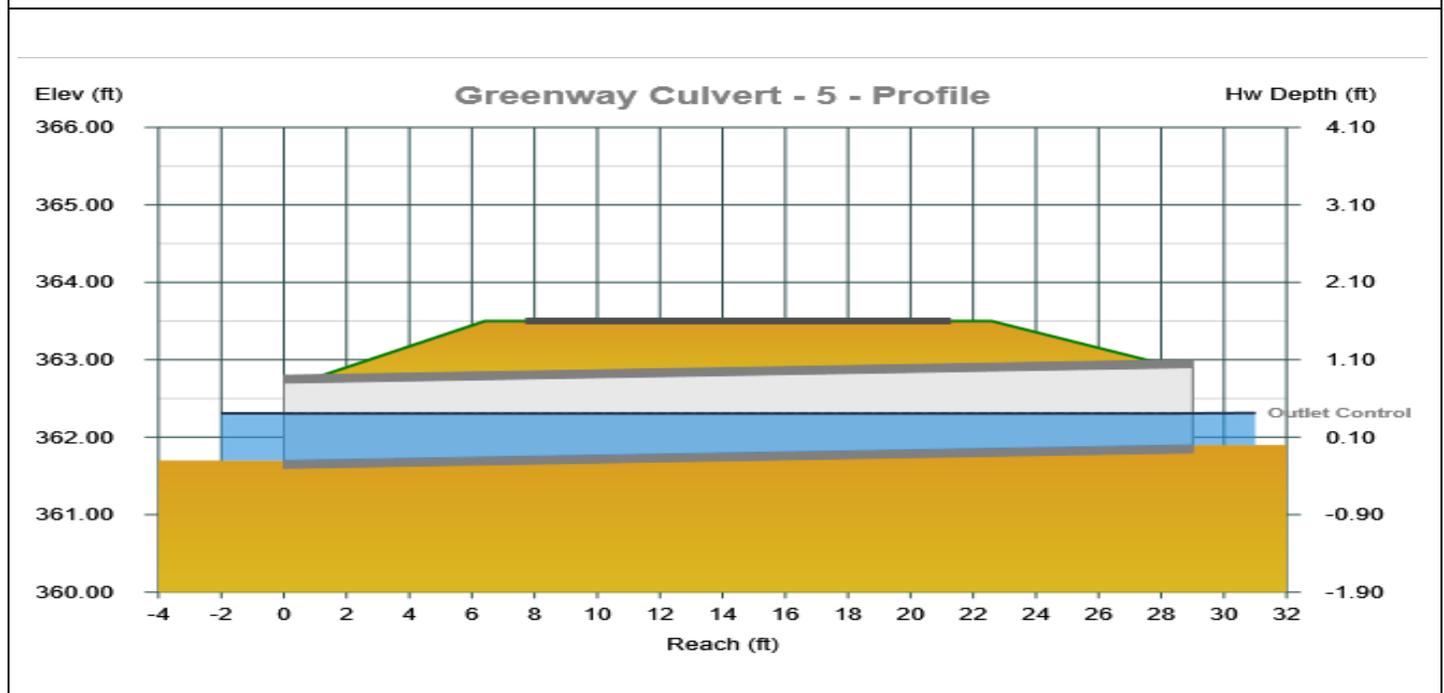
## Culvert 1

<b>CULVERT</b>		<b>EMBANKMENT</b>	
Shape	= Circular	Top Width	= 14.00 ft
Inlet Edge	= Projecting	Top Elevation	= 363.50 ft
Material	= Concrete	Crest Length	= 50.00 ft
Manning's n	= 0.012	<b>DISCHARGE</b>	
Rise	= 12 in	Method	= Rational Method
Span	= 12 in	Drainage Area	= 0.19 ac
Invert Elev. Down	= 361.70 ft	Runoff Coefficient	= 0.35
Length	= 29.0 ft	Time of Concentration	= 5 min
Slope	= 0.007 ft/ft	<b>TAILWATER</b>	
Invert Elev. Up	= 361.90 ft	Tailwater Elevation	= (dc+D)/2
No. Barrels	= 1		
Plan Skew Angle	= 30 degrees		

### CALCULATION SAMPLE, 1 - Year Event

Discharge			Velocity		Depth		HGL @ Hw/D = 0.41		
Total	Culvert	Over Top	Down	Up	Down	Up	Down	Up	Hw
(cfs)	(cfs)	(cfs)	(ft/s)	(ft/s)	(in)	(in)	(ft)	(ft)	(ft)
0.27	0.27	0.00	0.53	0.89	7.3	4.9	362.31	362.31	362.31

Notes: IDF Curves = The Point. IDF;



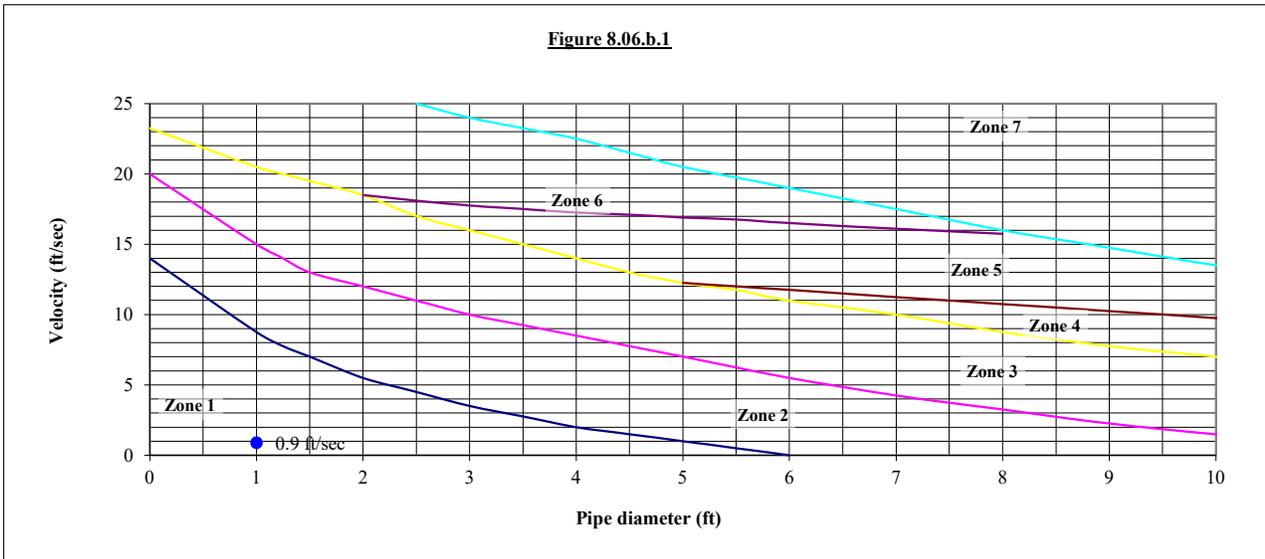


## DESIGN OF RIPRAP OUTLET PROTECTION WORKSHEET

Project: The Point South - Pkg 2  
 Project Number: AWH-20000  
 Outlet Number: Greenway Culvert 5

Date: 7/20/2021  
 Calculated By: WTO

Outlet flowrate = 0.48 cfs  
 Pipe diameter = 12 inches  
 Number of pipes = 1  
 Pipe separation = 0 feet  
 Outlet Velocity = 0.89 ft/sec



Zone from graph above =

Outlet pipe diameter =   
 Outlet flowrate =   
 Outlet velocity =   
 Material =

Length =   
 Width =   
 Stone diameter =   
 Thickness =

Zone	Material	Diameter	Thickness	Length	Width
1	Class A	3	12	4 x D(o)	3 x D(o)
2	Class B	6	18	6 x D(o)	3 x D(o)
3	Class I	13	24	8 x D(o)	3 x D(o)
4	Class I	13	24	8 x D(o)	3 x D(o)
5	Class II	23	36	10 x D(o)	3 x D(o)
6	Class II	23	36	10 x D(o)	3 x D(o)
7	Special study required				

1. Calculations based on NY DOT method - Pages 8.06.05 through 8.06.06 in NC Erosion Control Manual
2. Outlet velocity based on full-flow velocity